



# American Forestry

VOLUME 28

JANUARY, 1922

NUMBER 337

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SEEDS OF INTERNATIONAL FRIENDSHIP



FORESTRY IN NEW JERSEY



AN ARBORETUM FOR THE NATION



ALASKA'S FORESTS



FOREST RECREATION



THE FORESTRY GUIDES



THE MAPLES

# The American Forestry Association

## Washington, D. C.

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## Declaration of Principles and Policy of The American Forestry Association

**IT IS A VOLUNTARY** organization for the inculcation and spread of a forest policy on a scale adequate for our economic needs, and any person is eligible for membership.

**IT IS INDEPENDENT**, has no official connection with any Federal or State department or policy, and is devoted to a public service conducive to national prosperity.

**IT ASSERTS THAT** forestry means the propagation and care of forests for the production of timber as a crop; protection of watershed; utilization of non-agricultural soil; use of forests for public recreation.

**IT DECLARES THAT FORESTRY** is of immense importance to the people, that the census of 1913 shows our forests annually supply over one and a quarter billion dollars' worth of products; employ 722,000 people; pay \$267,000,000 in wages; cover 550,000,000 acres unsuited for agriculture; regulate the distribution of water; prevent erosion of lands; and are essential to the beauty of the country and the health of the nation.

**IT RECOGNIZES THAT** forestry is an industry limited by economic conditions, that private owners should be aided and encouraged by investigations, demonstrations, and educational work, since they cannot be expected to practice forestry at a financial loss; that Federal and State governments should undertake scientific forestry upon National and State forest reserves for the benefit of the public.

**IT WILL DEVOTE** its influence and educational facilities to the development of public thought and knowledge along these practical lines.

#### It Will Support These Policies

National and State Forests under Federal and State Ownership, administration and management respectively; adequate appropriations for their care and management; Federal co-operation with the State, especially in forest fire protection.

State activity by acquirement of forest lands; organization for fire protection; encouragement of forest planting by communal and private owners, non-political departmentally independent forest organization, with liberal appropriations for these purposes.

Forest Fire Protection by Federal, State and fire protective agencies, and encouragement and extension individually and by co-operation; without adequate fire protection all other measures for forest crop production will fail.

Forest Planting by Federal and State governments and long-lived corporations and acquirement of waste lands for this purpose; and also planting by private owners, where profitable, and encouragement of natural regeneration.

Forest Taxation Reforms removing unjust burdens from owners of growing timber.

Closer Utilization in logging and manufacturing without loss to owners; aid to lumbermen in achieving this.

Cutting of Mature Timber where and as the domestic market demands it except on areas maintained for park or scenic purposes, and compensation of forest owners for loss suffered through protection of watersheds, or on behalf of any public interest.

Equal protection to the lumber industry and to public interests in legislation affecting private timberland operations, recognizing that lumbering is as legitimate and necessary as the forests themselves.

Classification by experts of lands best suited for farming and those best suited for forestry; and liberal National and State appropriations for this work.







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## "THE HALL OF FAME FOR TREES"



### THE BATTLE-GROUND OAK

*"Just so, they say, old violins  
Soft echoes long have borne,  
To touch and thrill, and moving skill  
Of masters dead and gone."*

*This famous old tree, also known as the "Cornwallis Oak" and the "Liberty Oak," is located only a few hundred yards from where the battle of Guilford Courthouse was fought in 1781, in North Carolina, and tradition has it that during this battle General Green tied his horse to this tree, and that the horse nipped the top out of it, causing the multitude of branches. Aside from its historic interest, this tree is notable for its symmetrical beauty alone. It now has a spread of over one hundred feet and a circumference of twenty-one feet at the base. It has been nominated for the Hall of Fame by Mrs. Dorian H. Blair, of Greensboro, North Carolina; by Mark C. Mills, of Guilford College, and by Mr. Paul Lindley, of Pomona, North Carolina.*

# AMERICAN FORESTRY

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## SEEDS OF INTERNATIONAL FRIENDSHIP

By Arthur Newton Pack

European Commissioner of the American Forestry Association

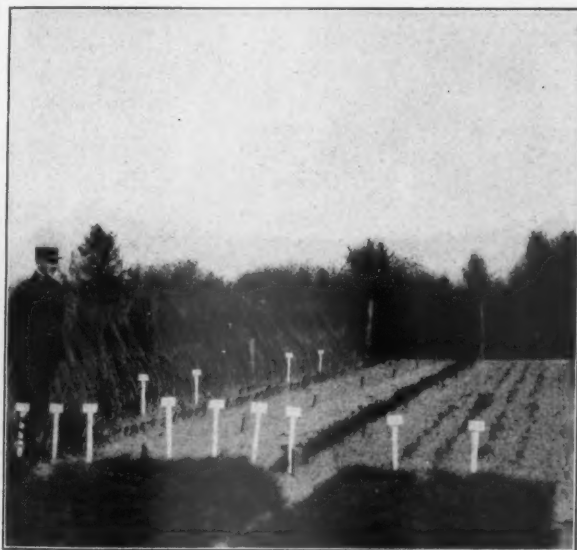
This is the second of a series of articles by Mr. Pack. It tells what was done by Great Britain, France and Belgium with the American tree seed donated to these countries by the American Forestry Association to aid in restoring the forests which were destroyed by the war.—Editor.

Paris, France, September, 1921.

IN considering plans for future world peace it must be recognized that what creates the ability of peoples to understand and appreciate one another and makes for a real "entente cordiale" between nations is only the sum total of many small international courtesies and friendly acts. The gift of tree seeds from the American Forestry Association to the governments of France, Great Britain

while the loss through drought has made it equally necessary for little Belgium to acquire large additional supplies. Nearly every accessible tree-growing country in the world will have to furnish its share: Germany, Austria, Holland, Poland, Serbia, Italy, Corsica, Japan, and last but not least, the United States and Canada. Ours will be a very large portion, and the forestry heads of each of the allied governments are asking whether the American Forestry Association cannot again help in its procurement.

In an area extending southward from the Belgian border near Valenciennes down through the fearful desolation marking the once famous Hindenburg line to Laon and Soissons, occurred as one might expect the greatest devastation and destruction of French forests. It was



AN EXPERIMENTAL NURSERY

Fifteen different species of tree seeds presented by the American Forestry Association are here being tried out in this nursery in Northern France.

and Belgium, made, as it was, shortly after the signing of the Armistice, had this point in view, and its reception and use by these governments illustrates even more clearly the value in which they hold not merely the gift but the spirit which it showed.

Great Britain's present planting program calls for not less than one billion two hundred million tree seeds per annum. France can hardly do with a smaller amount,



ONE OF THE NEW NURSERIES IN NORTHERN FRANCE

The French foresters gladly point out the tiny seedlings of Douglas Fir, which are soon to be transplanted to permanent locations.





OUR SEED IN FRANCE

The shipment of American tree seed to France was not received as early as that sent to Great Britain. Hence the difference in height.

quite natural, therefore, that the French government should decide to use our entire gift of twenty-five million seeds for re-afforestation in that region, and it is in the newly constructed tree nurseries here that the French foresters gladly point out the tiny seedlings of American Douglas Fir which are soon to be transplanted to permanent locations. All reconstruction in France goes according to a carefully arranged plan and every site which



A BIRD FEEDING STATION IN FRANCE

The wholesale destruction of the forests succeeded in driving out most of the song birds. The New York Bird Society came to the rescue by supplying scores of bird houses and feeding places, which are looked after by the foresters.

will in the future be crowned with a little woodland of American trees, has already been carefully chosen. One cannot fail to appreciate the fine sentiment which actuates the French ministry as expressed in the general order which covered the selection of those sites: "The plantations made from the seed presented to us by the American Forestry Association," says the order, "should be located in places readily accessible to the main travelled roads and if possible on or near well-known sites, with the view that such future forests shall remain as a monument to the partnership of France and America in the Great War."

Next to the defense of Verdun the battles fought over the famous Chemin des Dames were among the bloodiest of the war. So awful was the artillery fire that hardly even a charred stump remains of the once thick forest



RECONSTRUCTING A FOREST NEAR THE BELGIAN BORDER

The French forest officer is indicating a spot where a few of the seeds presented by the American Forestry Association have been sown.

along its slopes. This was one of the first sites chosen for a plantation of American Douglas Fir, and it is indeed a particularly appropriate spot; not only to commemorate the part played by our troops in the last of those terrific struggles, but to mark the region supervised by the American Committee for Devastated France, whose splendid work of co-operation with the French government and people still continues as one of the finest examples of American confidence and encouragement. The forest of Saint Gobain, the famous ruins of Coucy-le-Chateau, dynamited by the retreating Germans, and many other places chosen for American tree plantations are hardly of less historical interest, and will be visited by tourists from all over the world.

Farther north there was very little fighting, but the German army cut every stick of available timber for its own use. In the forest of Mormal stand nineteen forest-



ers' houses. Once upon a time these guarded twenty-five thousand acres of beautiful pine and beech forest, of which nothing remains today except the smaller saplings. Heath and gorse bushes conceal even the carelessly cut German stumps. So vast an undertaking is involved in replanting everywhere at once that here the French have adopted a somewhat different system—clearing and spading up only a little circle here and there wherein our seed has been sown directly without the intermediate nursery stage. The loss may be heavier, but the labor of reforestation should be lightened. This experiment with our seeds is



THE RUINS OF COUCY-LE-CHATEAU

The French government has selected such well known places as this for the plantations of American trees, to the end that these small forests may commemorate the partnership of France and America in the Great War.



THE FAMOUS CHEMIN DES DAMES

The dense forest which once stood here was totally destroyed by shell-fire. Twenty years from now this spot will be crowned with a fine young forest of American Douglas Fir.

of unusual interest to us in America, where planting labor costs are so high, and it may be that an experiment made with American Douglas Fir in France will prove to have real value to forestry in America. The whole northern district, Lille, Valenciennes and Hirson, is part of the great coal mining and manufacturing center of France which the German army so thoroughly demolished, and because of their location at the door of reviving industry the woodlands here, splashed with patches of American trees, will hold some of the highest commercial value of any forests in the world. No better proof of the importance of re-

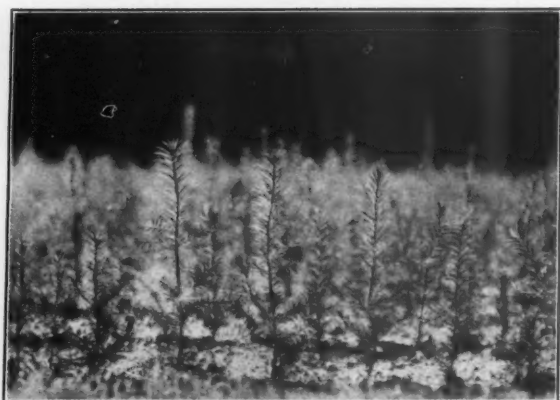
foresting our own eastern areas need be sought.

The American Forestry Association does not stand alone in this region as the only contributor to the future welfare of French forests. In a tiny woodland in the Mormal forest somehow neglected by the Germany army, is a sign erected by the New York Bird Society and scores of bird houses and feeding stations testify to the manner in which these other Americans too are



IN THE "ZONE ROUGE"

The French government is confronted with the necessity of reforesting nearly two million acres of land upon which the forests were destroyed by shell fire or cut by the occupying German army.



IN THE NEW FOREST, ENGLAND

Douglas Fir from seed presented by the American Forestry Association is making good progress in these plantations.

striving to sow seeds of international good will.

All of Europe has suffered very severely this summer from the worst drought known in many years. It has not only given a serious setback to the reconstituted agricultural regions but has meant a fearful loss in tree seedlings and young plantations. In this respect Belgium has suffered even more than her neighbors, for of a gift of an equal number of tree seeds which appear to have been planted with no less care and skill, very few seed-



AMERICAN DOUGLAS FIR SEEDLINGS IN IRELAND

The larger portion of the seeds presented to England by the American Forestry Association have been sent to Ireland. The splendid showing here is the result of a planting made in the spring of 1920, the seedlings already having attained an average height of nine inches.

lings remain. Both France and Belgium are greatly pleased with our American Douglas Fir, which with us is found in the greatest abundance on the northern Pacific coast. The first Douglas Fir was introduced on the continent of Europe 25 to 40 years ago. M. Crahay, who has for some years been the very active head of forestry in Belgium, is a great believer in this tree, which because of its rapidity of growth and the commercial value of its wood, he believes will go far to help meet the serious problems of afforestation. The Belgian Ministry of Waters and Forests once boasted of several fine small plantations of Douglas in the Ardennes, but today not a stick remains from the axes of the German army. It is in the beautiful Ardennes Mountains bordering on the



YOUNG DOUGLAS FIR IN EUROPE

The American Douglas Fir was introduced in Continental Europe some 25 to 40 years ago.

old Duchy of Luxembourg that most of the Belgian forests were formerly located, and this is the area which will be replanted with patches of American Douglas mixed with European pine and spruce. The policy of intermingling of kinds and planting in small groups common to both France and Belgium is intended as an assurance against serious loss from insect or other pests which might be particularly likely to attack a foreign species. Also it must be recognized that even if a good

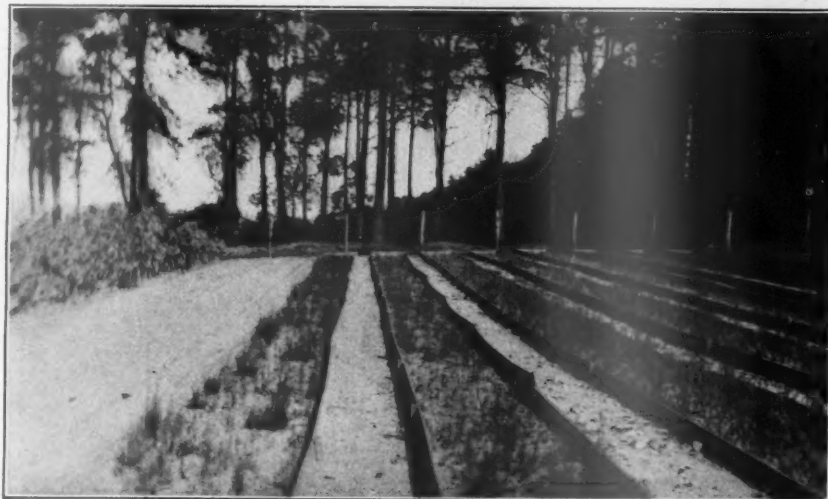
average crop of seedlings from the twenty-five million seeds presented by the Association to each of our former allies were to be planted in a single block, the resulting forest would not be likely to cover in all more than five or six thousand acres, while France, for example, is confronted with the necessity of reforesting not less than two million acres.

Across the channel in England the use of our seeds is of more than ordinary interest because of its connection with Great Britain's new forest policy. Here again the favorite

American species is the Douglas Fir, although Sitka spruce (the spruce of Alaska and our northern Pacific coast) is much desired. As a moisture loving tree it would seem to be especially suited to the British climate. About a hundred pounds of American seed were allocated by the British Forestry Commission to the interesting work of afforestation along the route of the Caledonian Canal in Scotland. From the point of view of sentiment few better places could have been found than this, since that canal was the route by which a large

number of American submarine chasers were mobilized at will either in the Irish Sea or the North Sea. Almost within sight of one of these future American tree plantations lie today row upon row of these same chasers,

now the property of the British government and awaiting sale or demolition. Douglas Fir is being planted in almost every section of the British Isles, but by far the larger portion of the seeds which came from the American Forestry Association were dispatched by the commission to Ireland. These



A NURSERY IN WINDSOR FOREST

The seed of American Western larch presented to the British government by the American Forestry Association has suffered very much from the drought of the past summer.

were planted in nurseries in County Tyrone, about eighteen months ago and have shown a surprisingly rapid growth. It is a fact one of the best nursery showings that may be seen anywhere, and the local foresters may well be proud thereof. This disposition of the seeds was quite without any suggestion from the American Forestry Association and in view of the Irish problem we can only hope that here too their dedication as seeds of good will will bear fruit in helping to establish the desire for broad-minded co-operation and understanding.

## ANNOUNCEMENT OF THE ANNUAL MEETING OF THE AMERICAN FORESTRY ASSOCIATION

The annual meeting of the American Forestry Association will be held in Washington, D. C., on Thursday, January 26, 1922, at 2 P. M., at the New Willard Hotel.

At this meeting the amended by-laws, which are published on Page 39 of this magazine, will

be submitted to the members, and they will be asked to adopt the amendments.

There will be addresses by prominent speakers on forestry topics at the general session in the afternoon, and in the evening there will be speeches and a smoker at the University Club.



# BOTANIC GARDEN AND ARBORETUM FOR THE NATION

By W. R. Mattoon, United States Forest Service

**F**ORESTERS and lovers of trees the country over will be interested in the movement on foot to establish a great national botanic garden and arboretum in the suburbs of Washington. Few botanic gardens exist in the country; the best known are the Arnold Arboretum near Boston, the New York Botanical Garden and the Missouri Botanical Gardens at Saint Louis. The United States Government has no real botanic garden. The present plot of about 12 acres, located on Pennsylvania Avenue just west of the Capitol grounds is used chiefly to produce cut flowers and decorative plants for official use, and attracts little public attention. There is a demand for a real botanic garden where the public may examine

of Plant Industry of the Department of Agriculture needs some means of retaining and growing thousands of plants brought here through the efforts of its agricultural explorers. The Biological Survey of the same Department is interested in a bird refuge which the uplands of the proposed site and some islands in the river will adequately provide.

Professor N. L. Britton points out that botanic gardens are important factors in public education and at the same time places for recreation and enjoyment. They are museums of living plants, arranged and labelled for imparting information direct to the public. Economic features are brought out by food plants, drug plants and fiber



LOOKING EASTWARD ACROSS THE ANACOSTIA RIVER

On the proposed site of the national arboretum are approximately twenty-seven different soil types, and thirty-six native species of forest trees now grow there.

living species of the great variety of trees, shrubs, vines and herbaceous plants native to the District of Columbia or capable of growing there. The plants should be classified and the public given free access to the grounds for recreation and study.

The climate of the District makes possible the growing of a very large number of plant species of the temperate zone. The Forest Service has for several years been interested in securing a location for establishing an exhibit of the trees of this and other countries. The Bureau

plants and the arboretum illustrates the subject of forest products. Many phases of biological relationships, physiological features, and geographical distribution of plants can be studied. The general public, however, taking a real interest in the educational features of botanic gardens, is more interested in landscape effects and in plants from the standpoint of beauty. Woodlands thickets, and meadows appeal to people as attractive places to visit, while developed flower gardens and well-kept public grounds, with a system of paths, carry instruction in the beautification of the home grounds.





CHESTNUT OAK ON THE ROUNDED TOP OF MT. HAMILTON

The climate of this proposed site for a botanic garden and arboretum makes possible the growing of a very large number of plant species and its proximity to the Capitol makes it an ideal location.



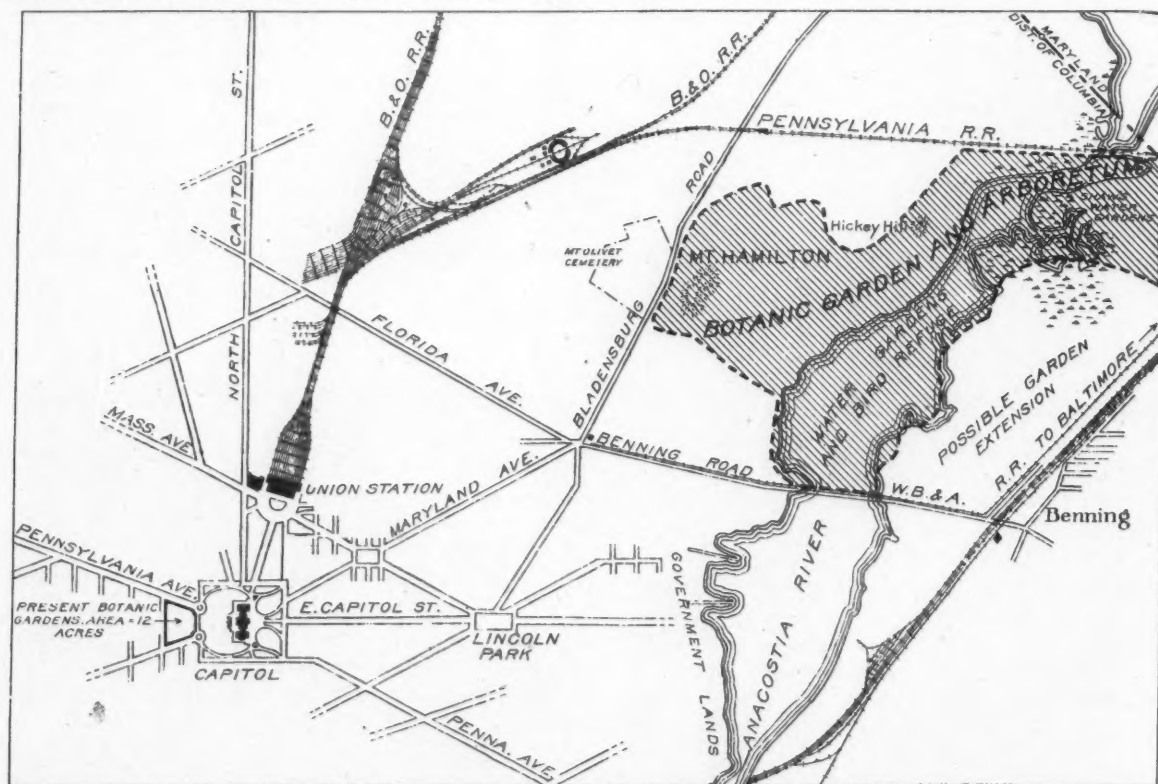
RICH AGRICULTURAL LANDS SURROUNDED BY FOREST

These lands offer excellent sites for experimental and propagating gardens. Diversity of natural soil and topographic conditions make this an ideal spot for a national arboretum.

Comparing the United States with other countries in respect to the number of botanic gardens, it is found that Great Britain and its colonies have 65, Germany 35, France and its colonies 25, Italy 23, Russia and Serbia 17, Austria 13 and the United States 12, with all other countries falling below. The first botanic garden was established at Padua, Italy, in 1533 and the second at Pisa in 1544. In France the oldest garden was started at Paris in 1597, and the Oxford garden in England was begun in 1621 with an initial area of 5 acres. The famous Kew Gardens in London have been in process of development since 1760. Largest in the world are the Rio de Janeiro gardens, with an area of some 2,000 acres.

The plan for the development of a great national arboretum and botanic garden at Washington is backed strongly by the National Commission of Fine Arts and various scientific and other bodies. It consists, first, in

Under existing plans for the improvement of Washington, provision is made for an Anacostia River Park as an integral part of the general park system that is being developed. The changes in this plan that would need to be made in order to provide for the Botanic Garden consist essentially in eliminating extensive and very costly filling and reclamation of tidal river flats and in retaining the wild rice lands, partly as a bird refuge and partly for conversion into water gardens along lines that will prove entirely harmonious with the development of the adjacent uplands. If carried out this plan will make possible one of the world's greatest arboreta and botanic gardens. Incidentally, the saving in cost due to the proposed change in the present plan of river improvement has been calculated as sufficient to cover the cost of purchasing the entire Mount Hamilton tract.



NATIONAL ARBORETUM AND BOTANIC GARDENS

Map showing the location of the proposed National botanic gardens and arboretum, including Mount Hamilton and Hickey Hill and lands adjacent to Anacostia River in the Northeast Section of the District of Columbia.

bringing about a radical change in the present approved plan for the improvement of about 400 acres of low-lands owned by the Government lying along the Anacostia River, and secondly in the addition by purchase of a hill known locally as Mount Hamilton together with surrounding lands. The proposed addition has an area of about 367 acres and adjoins the Government land for a distance of some 9,000 feet along the Anacostia River. The entire tract of some 800 acres in turn adjoins other lands under government ownership along the Potomac and Anacostia Rivers, so that approximately 1200 acres of continuous park area will be available.

The site lies in the northeast section and just within the boundary of the District of Columbia, two and one-quarter miles from the Capitol building. From the latter it may now be reached directly over Maryland avenue. The lands, as shown on the accompanying map, including Hickey Hill and the intervening section occupy the central area between Benning and Bladensburg Roads on the south and west, and the Pennsylvania railroad tracks and Anacostia River on the North and east sides, respectively. The tract lies, it may be added, on the main highway line between Baltimore and Washington. The Lincoln Highway could with little difficulty be brought

along the shores of the proposed Anacostia water gardens and thence by way of Maryland Avenue to the Capitol Building, affording an entrance to Washington of unequaled beauty.

Mount Hamilton, a hill of considerable importance in a flat country, rises in one-half mile from the Anacostia River (tidewater) to an altitude of 239 feet. Its elevation above the surrounding country southeastward is nearly 200 feet, and is attained within a distance of one-quarter mile. On the other sides the difference in elevation though less is still striking. It is least along the main Bladensburg Road where the rise is some 140 feet in about one-eighth mile. The location in surrounding land of low altitude gives Mount Hamilton a setting which tends somewhat to exaggerate its elevation and appearance; these are enhanced by the general symmetry of its form. The top consists of a ridge which connects three rounded peaks within about one-quarter of a mile, the summit marking the apexes of a right angle triangle. The ridge consists of shallow soil overlying and containing sandstone conglomerate rock impregnated with iron, which clearly accounts for the topographic formation. The hill is altogether a striking feature in the landscape.

Mount Hamilton is well wooded to the lower slopes, which have partly been cleared for agriculture, though cultivation of much of the cleared land has been abandoned. Altogether about 210 acres of the tract are forested. Thirty-six native species of forest trees have been identified by Dr. Ivan Tidestrom, the botanist, Mixed oaks, with white oak predominating, hickory, black walnut, yellow poplar, black gum, and a few other species compose the slope type, giving away gradually with increasing elevation to chestnut oak, which occurs over the summit in almost pure stand. The tract has been an unmanaged woods largely open to the public and subject to timber trespass and frequent fires. As a result there has been considerable injury and loss of good trees. Yet the canopy strikes one as being practically complete over much of the area, the trees rising to a height of probably 40 to 50 feet near the top and 60 to 80 feet at the

base of the slope. Much of the timber is mature. The topography and forest cover give one the impression of a high oak ridge in the Appalachians—a very agreeable surprise.

A hearing before the joint Congressional Committee on the Library, held on May 21, 1920, resulted in Senator Brandagee, as chairman of the Committee, presenting to the Senate a land acquisition bill providing for the taking over of the Mount Hamilton tract. It had two readings before adjournment but failed of enactment. In the last session Senator Brandagee re-introduced his bill (S. 1560), and Congressman Cooper, of Wisconsin, has placed the matter before the House in a bill (H. R. 6683) which aims at accomplishing the same purpose.

A soil survey made by the Bureau of Soils, presented at the hearing, shows approximately twenty-seven different soil types on the tract proposed for purchase. In this connection one of the Government experts has stated that, with the possible exception of Rio de Janeiro, such a diversity of natural soil and topographic conditions favorable to establishing an extensive botanic garden close to a national capital probably exists nowhere else. Some notable people interested in scientific research and civic improvement were brought together at the hearing. These included Dr. N. L. Britton, Director of the New York Botanic Garden; Dr. David Fairchild, in charge of the office of Foreign Seed and Plant Introduction and Dr. F. V. Coville, Botanist of the Bureau of Plant Industry, United States Department of Agriculture; Col. C. A. Ridley, in charge of the District of Columbia Office of Public Buildings and Grounds; Mr. Frederick L. Olmstead and Mr. James G. Langdon, landscape architects; and Mr. Charles Moore, Chairman of the National Commission of Fine Arts. The finding of the Congressional Committee should be of national interest to scientists and the public at large, for such a garden and arboretum properly equipped and administered affords a wide variety of possibilities in the fields of education and enjoyment of plant life, in turn leading to results of far-reaching importance in the economic life of the Nation.

### PIONEER IN FORESTRY DIES

Through the death of Mr. S. T. Kelsey, at the home of his son Harlan P. Kelsey, on November 5th, forestry in America has lost one of her best and most devoted advocates. Mr. Kelsey was in his 89th year, and through his long and active life his zest for trees and tree planting, and his activities in the interest of forest conservation never abated. He was one of the first to foster forestry in America, doing all that he could to advance its interests in every way, through his writing, attendance at conventions all over the country and through his wide and influential personal acquaintance. In his passing he is recorded as a true pioneer of the profession of forestry in America.

### THE PROSTRATE JUNIPER

Much attention is being paid in American publications to the trees of Greenland; especially to the prostrate juniper.

This tree is indeed prostrate. Its trunk often measures as much as forty feet. But its height? Twenty-four inches! These measurements sound out of all proportion, but it is this very fact which makes this Greenland juniper unique among trees.

Perhaps it was the sight of the juniper in Greenland which suggested to some gardener the unique idea of dwarfing trees, a custom that has been prevalent in Eastern countries for many years and prevails almost unflinching in the landscaping of formal gardens.



# THE MAPLES

By J. S. Illick

THE Maples are among the best known trees found in the Northern Hemisphere. They are abundant in China and Japan, common in Europe, and widely distributed in North America. There are seventy distinct species of Maples known in the world, of which number thirty-five are native to China and Japan, and thirteen occur in North America.

That Japan is the ancestral home of the Maples is now an accepted belief among botanists. In the Island Empire of the Orient one may find traces of the original maple stock, and some of the most attractive and best bred maple trees now growing upon the face of the earth. To the Maples, the forests of Japan owe much of their variety, beauty and interest. The people of Japan are proud of their Maple trees. For centuries they have been breeding them in order to develop varieties with striking and unique characteristics. Their efforts along this line have been successful, for now the Japanese Maples are famed all over the world for their attractive form, gorgeously colored foliage and delicate leaf textures.

Among the most striking accomplishments of the Japanese in the breeding of the Maple is the development of miniature Maples. These tiny trees are grown in pots and exemplify the highest degree of tree breeding that has yet been attained by man. These miniature trees have been bred and cultivated for centuries. Their leaves show a wide variation in form, color and texture. At

a certain season of the year it is a fashion for the Japanese to hold Maple Shows. Many different varieties are exhibited, and the people turn out and view them with interest and award prizes for the best exhibits. The practice is similar to the rose shows in America.

While the Japanese Maples excel in variety and unique-

ness, the American Maples are unrivaled in size and beauty by the Maples of any other part of the world. Of the thirteen Maples native to the United States, nine occur east of the Rocky Mountains, and four are native to the western part of our country.

No other group of native trees show a wider variation in their form and structure than do the Maples. Their leaves may be simple or compound, range in size from large to small, and have a smooth or hairy surface.

Their twigs range from slender to stout, and may be green, gray, brown or red in color. Their flowers may occur in small lateral clusters, in long drooping tassels, or in erect spikes, and appear before, with, or after the leaves. The fruit of all the Maples consists of a pair of winged seeds known as a maple key. Each kind of Maple bears a distinctive key which can readily be distinguished from that of all other closely related species.

The Maples occur on a wide range of habitats. The Ash-leaved Maple grows at its best along the banks of streams and ponds or lakes. The Sugar Maple prefers well drained, rich soil, and the Striped Maple is well satisfied in shaded situations and moist places, while the Mountain Maple thrives on dry, rocky hillsides and mountain tops.

The Maples have so many and such striking distinguishing characteristics that it is not difficult to recognize them. There is little chance of confusing them with each other or with other forest trees.

The best way to get acquainted with them is to learn their names. It may be helpful to know not only their common names but also their scientific names, for some of them are very appropriate and may be helpful in fixing their distinguishing characteristics. The common and scientific names of six of our common Maples follow:



A BIG SUGAR MAPLE

The best known of our native hardwoods and a tree entirely devoted to the service of man.



## COMMON NAMES

- (1) Sugar Maple
- (2) Silver Maple
- (3) Red Maple
- (4) Striped Maple
- (5) Mountain Maple
- (6) Ash-leaved Maple; Box Elder.

## SCIENTIFIC NAMES

- Acer saccharum.*  
*Acer saccharinum.*  
*Acer rubrum.*  
*Acer pennsylvanicum.*  
*Acer spicatum.*  
*Acer negundo.*

The Sugar Maple is probably the best known hardwood tree native to North America. All who have visited the North woods know its beauty, stateliness and healthy appearance. Lumbermen all over the northern hardwood forest region are familiar with its value, and the wide range of uses of its wood; and the farmer boy regards this tree as a real friend, for when tapped it produces large quantities of sap, from which the delicious maple sugar and maple syrup are manufactured.

At all seasons of the year this prince of forest trees may be distinguished with little difficulty. The grayish to black bark on old trunks roughened by shallow fissures is distinctive and the slender brown twigs marked with pale dots are positive means of identification. In summer its large, simple and opposite leaves with coarsely toothed lobes and delicate texture are also distinctive.

The fruit of the Sugar Maple does not mature until September. It often persists far into winter, while that of the Red and Silver Maple ripens in early summer. The seeds of Sugar Maple germinate soon after falling to the ground and develop into small seedlings, which often form dense mats upon the forest floor. As many as 50,000 seedlings have been counted by the writer on a single acre of woodland in northern Pennsylvania, and similar pictures can be found in New York, Michigan, Wisconsin and other regions where the Sugar Maple is common.

There is no more positive distinguishing characteristic of the Sugar Maple than its buds. They are brown in color, sharp-pointed, conical and covered with eight to sixteen exposed scales. They are clustered at the ends of the twigs and occur solitary along the side of the twigs. If once recognized they cannot be confused with those of any other tree.

Four of the six Maples native to the eastern United States reach a size sufficiently large to classify them among our important timber trees. They can be distinguished from each other by the characteristics given in the key on the following page.



A ROADSIDE LINED WITH SUGAR MAPLES

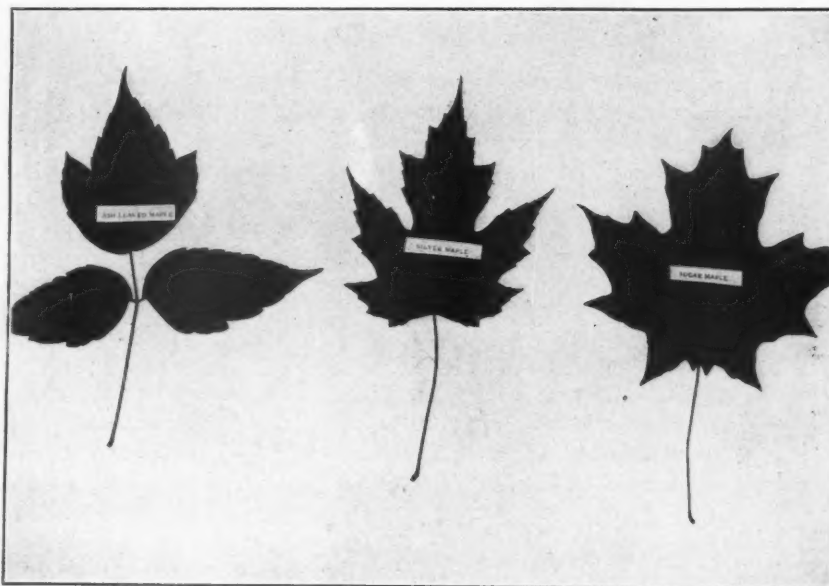
The sugar maple is being used in many sections in planting highways and "Roads of Remembrance" and this picture shows how perfectly the tree is adapted to this use.

The wood of the Sugar Maple is well known. It touches our hands and satisfies our wants almost daily. We use it more frequently and in a greater number of ways than any other wood. It may be classified as an all-around wood, for it is used in the manufacture of not less than five hundred distinct articles of commerce. It is one of our chief flooring and furniture woods. Large quantities are also used for broom handles, refrigerators, kitchen cabinets, tooth picks, children's toys, musical instruments and agricultural implements. Most wooden picnic platters and bowling pins are made of Maple wood. It is indeed difficult to think of any common household

article which is not sometimes made from Maple wood.

The Sugar Maple deserves to be protected and propagated for forestry and ornamental purposes. It produces valuable wood, yields delicious syrup and sugar, lives long, furnishes excellent shade, and possesses some of the cleanest and most beautiful features of any American tree. As a memorial tree the Sugar Maple has few equals, and as an avenue or roadside tree it ranks among the best.

The Silver Maple is also an important timber tree. It is one of the best known of our native Maples, for it has a wide natural distribution and has been planted extensively as a shade and ornamental tree. In summer it is



THREE COMMON NATIVE MAPLES

At the left, ash-leaved maple, in the center, silver leaf maple, and to the right the leaf of the sugar maple.

#### HOW TO RECOGNIZE THE FOUR IMPORTANT NATIVE MAPLES OF THE EAST

NAME	LEAVES	FLOWERS	FRUIT	BUDS	BARK
<b>SUGAR MAPLE.</b>	Simple, usually 5-lobed, coarsely toothed, pale green on lower surface.	Appear with the leaves. Occur in drooping clusters.	Matures in autumn. Medium-sized maple key borne on long stalks and clustered.	Brown, sharp-pointed, with 8 to 16 exposed scales. Occur solitary along twigs.	Grayish brown on twigs, gray to black on main stem, not scaly.
<b>SILVER MAPLE.</b>	Simple, 5-lobed, silvery white on lower surface, leaf clefts deep and round based.	Appear before leaves. Occur in dense clusters along twigs.	Matures in early summer. Large maple key with rather divergent wings.	Red, blunt-pointed, clustered along twigs.	Greenish to reddish brown on twigs, dark gray and scaly on main stem.
<b>RED MAPLE.</b>	Simple, 3 to 5-lobed, whitish on lower surface; leaf clefts shallow and sharp-pointed at base.	Appear before leaves. Occur in dense clusters along twigs.	Matures in early summer. Small maple key, arranged in short lateral clusters.	Red, blunt-pointed, clustered along twigs.	Reddish with white dots on twigs, grayish and somewhat scaly on main stems.
<b>ASH - LEAVED MAPLE.</b>	Compound, with 3 to 5 leaflets.	Appear with leaves. Occur in drooping clusters and spikes.	Matures in late summer. Medium-sized maple key with converging wings; arranged in long drooping clusters. May remain on trees over winter.	Short-stalked, blunt-pointed, white wooly; only a few bud-scales visible.	Smooth and purplish green on twigs, grayish brown and furrowed on main stem.



A SUGAR MAPLE TREE WITH A HISTORY

It was planted in 1876 and when 30 years old had a breast-high diameter of 14 inches.

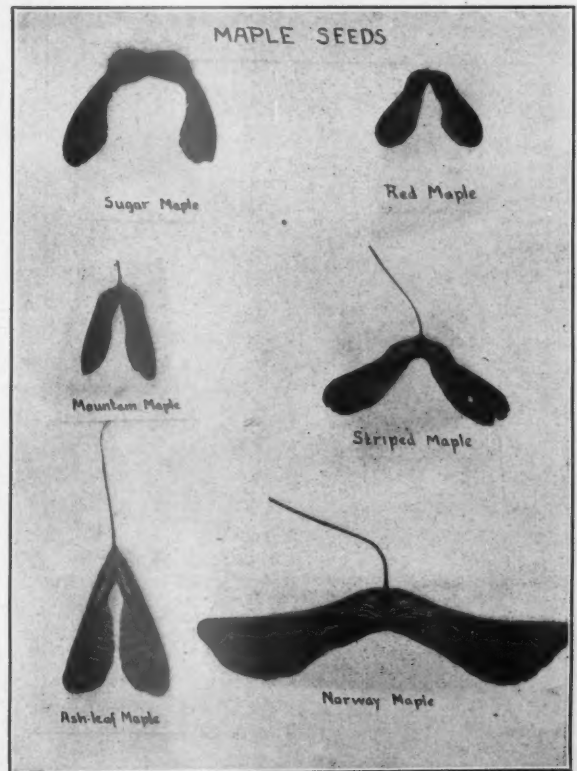
always easily distinguished by the silvery white under surface of the leaves and by the deep clefts in the leaves, the bases of which are round, while those of the Red Maple are sharp-angled. The Silver Maple is usually found along the banks of rivers and other streams. It occurs from New Brunswick and Ontario south to Florida and west to Oklahoma and Dakota. In its wide range it has a number of common names. Among them are White Maple, Soft Maple and River Maple.

The Silver Maple blossoms very early in spring before the leaves have made their appearance. In fact, it is among the earliest of our native trees to blossom. In most localities the flowers appear before those of the Red Maple. The flowers are crowded towards the ends of the branches, each lateral bud containing from three to five blossoms. They range in color from reddish to crimson, and are favorites for the honey bee which swarm about them in great numbers on the first warm days of spring. Its fruit matures early in summer and is larger than that of any of the eastern Maples. The bark is

somewhat furrowed and separates in long scales which are loose at both ends and attached at the middle. This is a helpful distinguishing characteristic at all seasons of the year. The bending down of the branches and the distinct upward swoop of their small ends is also a positive means of identification.

The Silver Maple may attain a large size upon favorable situations. It is not unusual to find a specimen one a hundred feet in height and from three to four feet in diameter. The wood is much softer than that of the Sugar Maple, but is used for a wide range of purposes. It is especially prized in the manufacture of fruit baskets and berry boxes. The wide spreading crown and the drooping branches also recommend this tree for ornamental planting, and a beautiful cut-leaf variety with a weeping habitat has been developed. Before planting it for ornamental purposes one should know that it is short-lived and that its branches are so brittle that they are readily broken off by the wind and by snow and ice pressure.

The Red Maple is ever mindful of its common name. At all seasons of the year some part of it is distinctly red. In winter the beautiful red twigs are marked with conspicuous white lenticles and dotted with clusters of reddish buds. Early in spring, before the leaves have made their appearance the red clusters of flowers appear, and in early summer the red winged fruit is conspicuous and hangs down from the branches on long drooping



FRUIT OF THE MAPLE

With a little study one may soon readily distinguish the maples by their fruit.





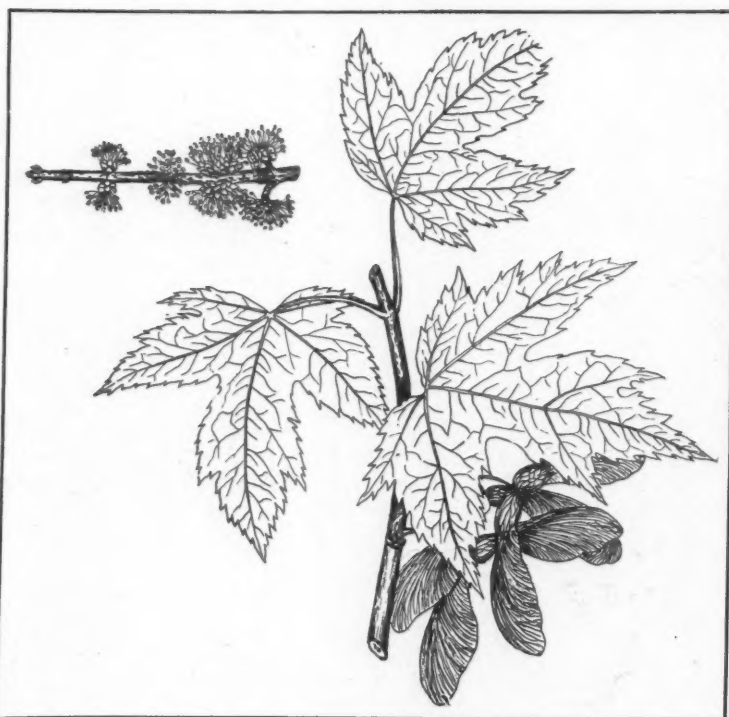
**A DISTINCTIVE TWIG**  
The twig and buds of the Sugar Maple are unmistakable.

stalks. In summer there is often a tinge of red along the veins of the leaves, and in autumn this superb tree is at its best. Just as the

leaves of many of our trees are beginning to fall, one may look across a meadow and see a gorgeous Red Maple completely clothed in scarlet, or one may find a solitary specimen on a hillside standing out as a flaming torch among its green associates. It is not only in summer and autumn that the Red Maple is true to its common name and recognized without much effort, for at other seasons of the year it also stands out with an individuality for its stem is gray and stately, and its branches clean and smooth, and its twigs dotted with white lenticles and knotted clusters of distinctly red buds.

Its scientific name is *Acer rubrum*. This name is quite appropriate, for the word "rubrum" means red. Sometimes this tree is called Scarlet Maple because of the scarlet autumnal color of its leaves. Other common names are: Soft Maple, Swamp Maple and White Maple.

If there is one maple that excels all others in beauty in the forest it must be the Red Maple. One usually finds it in wet places. It is commonest in swamps and along river banks, but also thrives in moist soil on mountain slopes. It thrives well when planted along village streets and in parks, but it is short-lived and needs plenty of moisture. These characteristics and requirements suggest that great care should be taken in the selection of



**FLOWER AND FRUIT OF THE SILVER MAPLE**

The flowers of the Silver Maple occur in clusters along the twigs and appear before the leaves. Its maple-key fruit is the largest of our native maples and the leaves are silvery white on the lower surface, with deep and round-based leaf-clefts.

planting sites for this tree.

The Ash-leaved Maple, also known as Box Elder, differs from all other Maples in that it has compound leaves with three to five leaflets, instead of simple leaves. It also bears the pollen-bearing and seed-producing flowers on separate trees, while the other Maples usually have both kinds of flowers on the same tree. These striking differences were formerly regarded important enough to place this tree in a distinct group by itself, but now it is again grouped with the other simple-leaved Maples.



**SUGAR MAPLE FLOWER, FRUIT AND LEAVES**

The flowers of the Sugar Maple appear with the leaves and occur in clusters on long, slender stalks. The leaves are large and coarsely toothed.



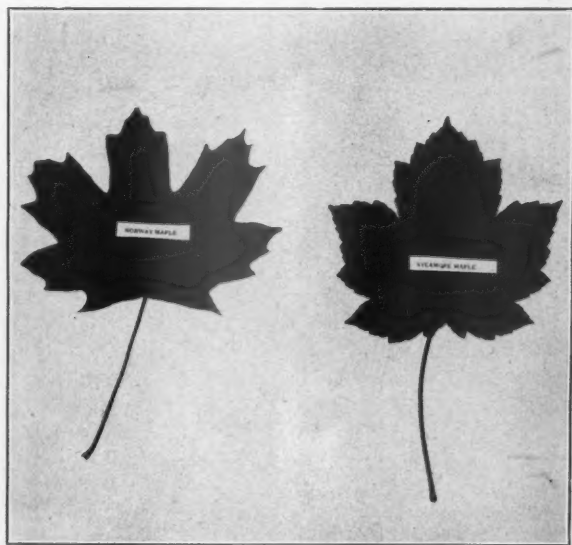


MOUNTAIN MAPLE FLOWERS AND FRUIT

The flowers of the Mountain Maple occur in erect spikes and its leaves are sharply toothed on the margin and 3 to 5-lobed.

mental tree, being attractive, vigorous and hardy, and practically free from insect and fungous foes.

These two European Maples have few characteristics in common with our American Maples, and may be dis-



LEARN TO KNOW THEM BY THEIR LEAVES

At the left is the leaf of the Norway Maple and at the right that of the Sycamore Maple.

tinguished from each other by the characteristics given in the previous table.

There are now recognized seventy different species of Maples in the world. No other group of trees are better known or have a wider range of uses. As a group they satisfy many human wants by the valuable products which they produce and by the pleasing effects which they make upon the human eye. It would be hard for us to get along without the Maples. They do so much for us. We use them every day in many ways while at work and at play. Their protection and perpetuation is our duty. If we do this task well there will flow forth from it worthy credits to us and needed benefits to thousands yet unborn.



A RED MAPLE GIANT

Many huge old maples are found in the State of Pennsylvania. This one is four feet in diameter and is free of branches for forty feet from the ground.

NAME	FORM AND SIZE	LEAVES	FLOWERS.	FRUIT	BARK	HABITAT
<b>MOUNTAIN MAPLE.</b>	Shrub or small tree, rarely over 15 feet high.	Usually 3-lobed, coarsely toothed, 3-5 inches long, light hairy on lower surface.	Occur in erect spikes, 3 to 4 inches long.	Small maple key about 1-2 of an inch long, arranged in drooping clusters.	On twigs reddish brown to gray; on stem reddish brown dotted with gray blotches.	Prefers rocky situations on mountains.
<b>STRIPED MAPLE.</b>	Small tree, usually 15-30 feet high.	Goose-foot-like, 5-6 inches long, 3-lobed at apex, finely toothed, prominently veined, rusty hairs on lower surface.	Occur in drooping tassels, 3 to 4 inches long.	Small maple key about 3-4 of an inch long, arranged in open drooping clusters.	On twigs reddish; on stem reddish brown streaked with long white lines.	Prefers moist situation in dense woods.

Two European Maples have been widely introduced into the United States. They are the Norway Maple and the Sycamore Maple. Among the shade trees which have been introduced into America from Europe, the Norway Maple easily stands in the first rank. Thousands of specimens are found throughout the Eastern United States. It is difficult to find a single town in which this tree has not been planted. It is a very hardy species, grows rapidly, and is practically insect and



FLOWER AND LEAF OF THE STRIPED MAPLE

The flowers of the Striped Maple occur in drooping tassels and the leaves are goose-foot like.

fungous proof. It satisfies most of the requirements of an ornamental tree, and in spite of the fact that it is a foreigner deserves to be planted extensively as a street and lawn tree. It is attractive from early spring to late in the fall, and during the winter presents a pleasing form and an attractive trunk.

The Sycamore Maple has also been introduced into the Eastern States on a rather extensive scale for shade and ornamental purposes. It has many advantages as a shade and orna-

NAME	BARK	LEAVES	FLOWERS	FRUIT	BUDS
<b>NORWAY MAPLE</b>	Black, fissured, not scaly.	Flexible, large coarsely toothed, almost entire on margin, smooth on lower surface; leaf stalks contain milky sap, resembles sugar maple.	Arranged in yellowish green clusters.	Large maple key with widely divergent wings.	Large and red.
<b>SYCAMORE MAPLE</b>	Brown, not fissured, scaly.	Firm, 3 to 5-lobed, sharply toothed on margin, slightly hairy on lower surface; leaf-stalks do not contain milky sap.	Arranged in erect spikes, about 3 inches long.	Small maple key with almost parallel wings.	Large and green.



BARK OF THE SILVER MAPLE

Shallow furrows and scaliness constitute the main characteristics of the Silver Maple bark.

Perhaps the most attractive feature of the Ash-leaved Maple is found in the rich color of its twigs. They are a glorious olive green, usually covered with a white bloom, and stand out boldly against the sky-line.

This tree is one of the fastest growing and most hardy of our native hardwoods. As a shade and ornamental tree it has the advantages of rapid growth, dense foliage, pleasing color, and comparative freedom from insect and fungous attack. It holds a very prominent place among the shade trees planted in the prairie states. In the older settled portion of the United States it is gradually giving place to other more desirable trees. The chief objection to it is the fact that it is always shedding something, and early in life defects frequently develop. The leaves fall both in and out of season, blossoms litter the ground in spring, and the seeds drop from early winter until spring.

The Ash-leaved Maple is distributed over most of the United States east of the Rocky Mountains. A closely related species is native to California. Recently a number of special varieties with distinctive colored foliage

have been developed. They are now offered by nurserymen for ornamental planting. This tree is worthy of a place in our forests, and deserves being used for ornamental planting, but great care should be taken in choosing suitable sites upon which to plant it. It does not develop satisfactorily upon unfavorable situations.

The two "Tom Thumbs" of the Maples are the Striped Maple and the Mountain Maple. Neither of these trees attain a size sufficiently large to classify them as timber trees, but both of them are so attractive and have such striking distinguishing characteristics that they deserve a place in our forests, and in our ornamental planting program.

The Striped Maple reaches the size of a small tree and loves shaded situations and moist soil, while the Mountain Maple is usually a shrub, and thrives well upon dry rocky hillsides and mountain tops. Both of these small forest trees are satisfied to take their places in the under-story of the forest, while others of their kind reach up high and struggle for a place in the upper-story of the forest. The following table gives the striking distinguishing characteristics of these two beautiful Maples which are common in the northwoods, and extend along the Allegheny Mountains as far south as the Carolinas, Tennessee and Georgia.



RED MAPLE FLOWERS AND FRUIT

The flowers of the Red Maple appear in clusters before the leaves are out. The fruit is a small winged key and the leaves are 3 to 5-lobed, with sharp based clefts.



# THE FOUNDATION FOR FORESTRY IN NEW JERSEY

By C. P. Wilber, State Fire Warden of New Jersey

**I**T is difficult to criticize the woodland owner who is indifferent to the practice of forestry, or even to forest conservation in a community where public opinion and public funds are either one or both indifferent or luke warm to forest fire prevention. Recognition of this fact has grown by leaps and bounds lately, yet, to far too many, fire prevention is still too largely a remote though interesting public problem, instead of a live personal concern, even in the localities where the work is best organized and oldest. To all right-minded, thinking people the national total of damage done by forest fire each year is appalling, the toll exacted by the demon flame in life, in property, in welfare is staggering, but the sense of individual responsibility to guard against their own and others ignorance or carelessness lies dormant while the waste goes on and want draws nearer.

The protection of forests from fire is not the whole of forestry as some timberland owners profess by their practice. But fire protection is the fundamental without which forestry is foolishness. Planting trees for future timber, where fire is likely, is a long-shot gamble. Improvement work in standing timber, not guarded

against fire, is a questionable business venture. Postponement of cutting for bigger and better timber in young merchantable woodlands exposed to fire is hazardous. Reservation of part of the merchantable stand in cutting for reproduction, with no safeguard against serious fire damage, is "bad business" practice. Holding cut-over land for future forest growth is "poor practice" from any business standpoint, unless the fire danger is provided against. These things might do for a faddist or a millionaire or both; but, if cutting timber and selling it were my life work and livelihood, I don't believe I'd do them. Would you?

New Jersey owes a deep debt of gratitude to those who started forestry in the state, for the far-sighted wisdom which built her whole program on adequate, compulsory, state-wide forest fire protection. After more than 15 years under this program it may be of interest and perhaps be instructive to consider what has been done and how and to point out the strength and weaknesses which experience with the system used have shown.

There are two million acres of land now forested or growing up to forest in the state. This is almost half



IT'S SPLENDID TO PUT OUT FOREST FIRES BUT BETTER TO KEEP THEM FROM STARTING

Forest fires in New Jersey are almost invariably man-made and so the State is making strenuous effort to acquaint her citizens with the true conditions and thereby make them more careful.

its total area. A large part of this land is not suitable for agriculture or similar uses. It will grow timber, but always will be waste land otherwise. The part now forested, but fit for other uses should be developed into



FIRE BLACKENED RUINS

Until this sort of thing is stopped it is hard to blame the man who won't improve his woods or take a chance on future timber crops.

farms, pastures, orchards, home sites, etc., but much of such land will be undeveloped long enough to grow one crop of timber if not more. Meanwhile it will lie idle and depreciate unless it does grow forest.

Given the chance, throughout New Jersey nature will retrieve waste land by spontaneous forest reproduction and will maintain a forest cover of valuable species permanently, without artificial planting or other expensive treatment. The retreating sources of virgin supply and the imminence of its exhaustion have emphasized to New Jersey, in common with every Eastern state, not only the wisdom of, but the necessity for home grown timber. Though the vast demands of the densest center of population in the world, within and on New Jersey's borders, can never be wholly met from the state's limited woodland area, yet the state should not and need not import most of the raw forest products used, as it now does, and a unique market awaits her home grown timber. There is practically no barrier between the present low production and the sorely needed and highly profitable maximum but fire. Because of this, as the forestry movement has grown in scope, in public interest and in achievement in New Jersey, its slogan has always remained "Stop Forest Fires."

Granting that fire-proofing the forests is worth while, the obvious necessities are a knowledge of what causes the fires and facilities for remedying these causes and for stopping fires which start. New Jersey has taken up

these problems through a cooperative system of Fire Wardens in the appointment, supervision and maintenance of which both the state and the local municipal governing bodies share the responsibility and expense. A force of five fire wardens is maintained by the state, under the direction of the Forestry Division of its Department of Conservation and Development. These fire wardens have general supervision of all forest fire work either throughout the state or in a large section called a "Division." Their time is given to law enforcement, to direction of fire fighting at the larger fires, to fire preventive work, to oversight of fire lookout and patrol and to general supervision of the work and business of the local fire wardens. Subject to the approval of the State Fire Warden, the townships (or local municipalities) appoint their local fire wardens. This force of local wardens numbering from 350 to 400, now covers 170 town-



NATURE WILL DO HER BEST

Even after a burn; but repeating the dose prevents maturing a crop and makes barren land before long.

ships, towns and boroughs embracing practically the entire forested area of the state. The expense of maintaining this organization and of the actual fire-fighting is paid by the local governing bodies, subject to refund of one-half the cost from the State Treasury after the bills have been paid. Each township (or chief) Fire Warden is paid \$20 per year and his assistants or District Fire Wardens \$10 per year as salary or retainer. All wardens receive \$2 for the first two hours or less at each fire and 50 cents per hour for all time over two hours. These local wardens are the backbone of the fire-fighting system, with authority to compel the use of any equipment necessary and the service of any one for fire-fighting.

Their helpers all are paid \$1 for the first two hours or less and 40c per hour thereafter. This provision for a fixed minimum pay for short service, whether for 10 minutes or two hours, at first blush has the appearance of extravagance. In practice, however, it makes the pay sufficient to encourage men to drop their work and give a fire attention at once while it is still a one-man job of a few minutes. It also has proven the spur to "quick work" by the wardens and their crews, by offering a bonus for "winding up" the work quickly for big pay, instead of working a longer time for less than the prevailing rate of wages in most localities. It therefore has helped to prevent both the damage and expense entailed in long continued fires.

Under this system an average total of 1,000 fires per

slowly by a purely or large "state-owned and operated" system. As the starting point in forest protection this has unquestionably been a real asset.

But, despite real progress in her forest fire campaign, fires of from 500 to thousands of acres in area each are still too common in New Jersey. Periods of severe danger yearly make conditions which the semi-volunteer system cannot adequately handle. Local wardens in their activity are tempted to observe political boundaries which fire does not respect. Local jealousy and pride are common weaknesses. Localities where help is scarce, communication poor and transportation difficult are plentiful. And we are still ignorant of how nearly one-half of our fires start. Therefore, as a state-wide proposition, timber which requires a minimum of from 30 to



#### I DIDN'T MEAN TO—

But this will not undo the damage which external vigilance only will prevent. Fire not only spoils the looks of things but is responsible for the loss of much valuable young timber.

year are dealt with so effectively that more than one-quarter of them never become two-acre fires and over half of them burn less than 10 acres each. With this organization supplemented by the work of the State's wardens, from 50 to 70 per cent of each year's fires are definitely fixed upon the person or agency responsible, a record which has earned for New Jersey an enviable place among the agencies working on the forest protection problem. Also this feature of the work has proven to be a tremendous power as a deterrent and educational factor in preventing fires. The local nature of the organization has aroused a local public interest and support which would certainly have been secured more

50 years to mature, is not yet assured that it can reach maturity, even though it may escape fire damage for the greater part of its growing period. What's the answer? Closer supervision. In the first place by a state-wide fire lookout system, so that fire can't sneak out into the woods and grow up before someone knows that he is in the neighborhood. Second, by enough more state fire wardens to supplement and supervise the local organization so that prompt and well-coordinated attention will be assured to every fire while it is still in short trousers, and so that someone who has the time, as well as the desire, may be on hand to know how all fires start and to know of the remedy, any places or condition which



is a fire menace, before the necessary spark has found it and done its damage.

Unlike some sections of the country, in which natural forces like lightning cause many fires, forest fires in New Jersey are almost invariably man-made. Whether it be the 30 per cent caused by the railroads, or 15 per cent from brush burning and campers' fires, or smokers setting from 15 to 50 per cent, or the small proportion of the total number from many other miscellaneous causes; someone's carelessness, ignorance or indifference is responsible. It is because of this that adequate facilities for watching the woodlands and those who frequent them will certainly stamp out the damage done by forest fire. It is because of this that New Jersey is extremely fortunate in that her schools are all required to teach the lesson of fire prevention, including the how and why of keeping fire from the woods. It is because of this that particular stress has always been laid upon ascertaining who or what started every fire, so that it might be made expensive and uncomfortable to set the woods afire and people thereby be made more careful.

In dealing with a number of the major causes of forest fire, the New Jersey legislation and practice differs from that in many states. From the first it has been recognized in New Jersey's forest protection work, that, as long as coal-burning locomotives were used, the most perfect mechanical devices on the locomotives were but partly effective at best and were always subject to deterioration or careless handling or both. Because of this, the entire matter of locomotive inspection and the discipline of personnel has been left unrestricted in the hands of the railroad companies and the whole forest fire prevention effort has been centered on fire-proofing the rights-of-way, so that not only locomotive sparks, but carelessly discarded matches and smoking materials might not be able to start forest fires. In addition, persistent and apparently successful effort has been made to fix responsibility for all of its fires upon each company and to apply a penalty for each, as in the case of fires from any other cause. Under this policy there have been established permanent "fire lines," so called, along the greater part of the forest trackage in the state, which, where maintained in right condition, provide effective protection save in abnormal danger periods. These lines vary from a cleared zone on which all surface growth and litter are destroyed with a strip of exposed material soil on the outer margin, to a simple burning off of the ground growth and litter frequently enough to keep it clear of inflammable material. They vary in width with surface conditions, with the topography and with the character of the traffic. Also practice has varied from complete clearing of all growth, trees included, to the encouragement of the densest tree shade compatible with a clean ground surface. The best results, however, appear to require a belt of from 100 to 200 feet in width from the nearest rail with a maximum of shade to intercept a falling spark, to discourage vegetation on the ground and to maintain soil moisture. A natural and advantageous outcome of the fire line policy is the interest and activity

of the section crews in stopping fires. If fire prevention is "up to" the section boss, bad locomotive maintenance and operation or no, responsibility is not divided and fire is given the least possible chance to develop. Within the last ten years railroad fires have dropped from over 50 per cent to less than 30 per cent of the total fires started and "big fires" from railroad operations are now extremely rare.

May I see your fire permit? This question has embarrassed great numbers who were using fires for work or pleasure, for New Jersey has from the first required that no open fire be built in or near the woodlands without a written permit from the local fire warden. But, while a nuisance to the experienced camper, an annoy-



LITTLE SURFACE FIRES MAKE TREES LIKE THESE  
And it is a very serious matter in view of the rapidly diminishing stands of virgin timber.

ance to the careful picnicker and sometimes almost a handicap to the trustworthy farmer or settler, this restriction has been of tremendous advantage to the State in keeping fire from the woodlands. It has reduced the needless use of fire, although the permits are issued free and made easily available to all responsible applicants. It has curtailed the careless use of fire because the person whose fire is "tagged" will not take chances, as when his fire is built haphazard and unknown. The foreigner, the new settler, and the inexperienced camper is restrained from doing himself, his neighbors and the community harm by coming into touch with a word of advice and warning before his fire is built. The proven reckless or incompetent can be denied the use of that

which, in his hands, is a public menace. And all burning can be banned in a locality or throughout the state when conditions of peculiar danger make any use of open fire a menace. It is needless to say that, though generally enforced, the strictness of the enforcement has varied with the local situations and different local wardens. But the result of rigid observance of the regulations has always shown emphatically and at once in a reduced number of forest fires. Also the permit law is only operative in townships where there are fire wardens appointed. Because of this the introduction of the warden system into new communities has almost always met with objection, but in no instance of which there is knowledge has the protection which the permit requirement afforded failed, within a short time, to transform the opposition to hearty appreciation of its value.

By other legislation the State can provide against or eliminate serious fire menaces by requiring patrol or remedial measures at the expense of the property owner or of the agent responsible for the condition. In this way threatened trouble from areas of logging slash, unkempt and dangerous roadsides, areas adjoining active steam machinery, improperly protected railroad rights-of-way, permanent camp sites and colonies, etc., is temporarily guarded against or permanently dis-

posed of as the need requires. One other feature of New Jersey's forest fire law deserves particular mention: that is the flexibility of its penalty procedure. Under the law there are provided statutory fines for violation of its provisions, which make responsibility for forest fires, whether by accident or intent, a violation, which compel continual watch over all fires built and require fire permits and fire-fighting service as above described. However, the State is given the power to remit or to reduce the statutory fine, where circumstances justify such action, even though the violation is admitted or

plainly shown. Because of this, there are almost no cases taken into court, and the penalties imposed assume an educational as well as punitive character because the unfortunate but necessary imposition of a severe penalty for a minor offense, if it is to be dealt with at all, which is so common under many penalty procedures, is avoided. A man can tell the truth, point out his ignorance or bad judgment and its result to friends and neighbors and yet not be "strung up" in consequence, if it is reasonable that he should not be.

The annual expenditure for all the work done now averages from \$35,000 to \$45,000, or from 1½ to 2½ cents per acre of forest protected. The variable item is the sum spent for fighting fire, for which the local communities and the State each pay from \$5,000 to \$10,000 per year, dependent on the severity of the fire season. Considering this low cost the State is getting a

surprisingly effective result in fire prevention and control. But a "good showing" or "great improvement" in one year over another in one or many ways has not and will not make forestry practice or woodland ownership attractive or even wise in New Jersey or anywhere. The State can wisely and should raise its annual expenditure for forest fire protection to 4c per acre. At this figure a measure of safety can be



IT "EATS 'EM ALIVE!"

This sort of treatment tends to discourage trees from growing. The young growth is either completely destroyed or stunted and—carelessness causes most forest fires.

assured to woodlands which will eliminate the present risk and take timber growing and timberland holding out of the class of hazardous investment, and make it a safe and profitable business venture.

A statement of the work done and results accomplished in stopping forest fires in New Jersey would be incomplete if it did not give recognition to the great benefit derived from the allotment of Federal Funds, under the so-called Week's Law, for the protection of the watersheds of navigable streams. Though available for use only in the northern third of the State, these funds have

(Continued on page 30)

## TO USE ALASKA'S FORESTS

**F**OR the first time in our history we have an opportunity, in Alaska, to guide the development of an immense forest region from the standpoint of permanent national interests," declares Col. W. B. Greeley, chief of the Forest Service, United States Department of Agriculture, in his annual report. "This," says the Forester, "does not mean putting the forests of Alaska under lock and key. It means the expansion of her forest industries as rapidly as there is a market for their products, but within the limits and under the control necessary to keep the land productive and make the supply of raw material for manufacture into lumber and paper perpetual.

"In considering ways and means for bettering conditions in the Territory, it is important that we do not lose sight of the bearing of her resources upon the national timber supply. The National Forests of Alaska contain 20,000,000 acres and over 75,000,000,000 feet of timber of a quality suitable for general consumption. This is equivalent to nearly 6 per cent of all the timber in the Continental United States. It includes 100,000,000 cords of pulp wood, whose serviceability for the manufacture of paper is fully established by existing commercial practice. Wisely handled, a paper industry can be developed in Alaska as permanent as the paper industries of Scandinavia, and capable of supplying a third of the present paper consumption of the United States. This is an opportunity which should not be thrown away by inviting unrestrained and destructive exploitation.

"There has been much loose and ignorant criticism of the National Forests of Alaska," continues Col. Greeley, "as imposing bars and locks upon the development of her timber resources. Since these National Forests were placed under administration in 1906 they have been open freely for the use of timber and other commercial resources under regulations of an exceedingly liberal and simple character. They are being cut today to the extent of about 45,000,000 board feet annually. They furnish 86 per cent of all the timber used in the Territory; they supply every sawmill on the Alaskan coast with logs; they furnish a large proportion of the piling, lumber and box shooks used in Alaska's fish industry; they supply the great bulk of the timber used in the mines in their portion of the Territory. Sites have been readily and freely obtained within them for a large number of salmon canneries, sawmills, villages, fox farms, and commercial establishments of every character adapted to this region.

"The Forest Service has labored steadily to promote the establishment of a paper industry in Alaska, which promises to be one of its most important industrial developments. The terms offered to paper manufacturers are, indeed, more flexible and more favorable to the

operator than in the case of any public timberlands in Canada, with whom comparisons have frequently been drawn. Two sales of pulp timber, aggregating 700,000,000 feet, have been made, and there are many pending applications and inquiries from responsible sources. Just as rapidly as bonafide undertakings for the building up of forest industries in the Territory take form, they are receiving and will receive every form of encouragement from the Forest Service consistent with the public interest in maintaining permanent production from Alaska's forests.

"The primary needs of Alaska are transportation, particularly marine transportation, and a decentralized administration of public resources and affairs in the Territory itself," asserts the Chief Forester. "The National Forests of Alaska have always been administered in all respects, except the more important transactions and questions of policy, by supervisors and rangers in the Territory. In recognition of the need for the fullest decentralization, however, a separate National Forest district covering the Territory was created on January 1, 1921, under the direction of a resident District Forester. Ninety-five per cent of the business of these National Forests does not pass beyond Alaska. A further step is desirable. There is need for correlating closely the local administrative activities of the Forest Service with those of other Federal agencies in Alaska and of the Territorial Government for settling currently any questions of overlapping jurisdiction and for securing coordinated action as new developments involving different agencies present themselves. This can be accomplished readily by organizing the chief local administrative officers of the Federal Government, together with the Governor, into an Alaskan council. The existence of such a body could not fail to facilitate the efforts of the Forest Service to make the National Forests in Alaska as beneficial as possible to the people of the Territory."

The Forester points out that in the administration of the National Forests of Alaska the fact must not be overlooked that the Territory is part of the United States, and that its forests are part of our National Forest resources, just as its agricultural problems are related to our national agricultural development and its fish are part of our national food supply.

"There is no more reason," he says, "why a separate and different system should be set up for dealing with the public forests of Alaska than there is for setting up such a system for each State. Alaska needs the application to her forests problems of the experience, technical knowledge and organization provided by the Forest Service; while the policy followed should be at one with that of the entire country, of which Alaska is simply a part."



# HOW SKUNKS DEFEND THEMSELVES

By R. W. Shufeldt,

C. M. Z. S., American Society of Mammalogists, etc.

**A**MONG the peculiarities of the otters, sea otter, skunks, badgers, and their near allies, constituting the North American Mustelidae, there is no one thing that has created the interest that their odoriferous glands have. This is particularly true of the skunks, and the very mention of this animal's name is immediately associated with its power of rendering itself excessively obnoxious or even dangerous to man and to all other animals. We say dangerous, as there have been well-attested cases where complete blindness has followed the injection of the fluid into the eyes, and also dangerous to property, for many things have been utterly ruined by having been defiled in the same manner.

These remarkable structures or glands are present, in



SKUNKS HUNTING IN THE DAYTIME

This unusual picture is from a photograph by Mr. Rollin E. Smith, who presented it to the writer. Skunks are wonderfully agile and elusive in such a situation as here shown, but they are not known to climb trees.

one form or another, in all the true musteline mammals, and through their use these animals possess a means of defense quite equal to the teeth and claws of any of the other small animals. This is the chief use to which these glands and their acrid secretions are put. The idea still prevails among those poorly informed in such matters that this secretion of the glands comes from the kidneys, to be stored in the bladder. Nothing could be further from the truth.

Prudism and false modesty are responsible for the masking of much truth in this world, thus fostering many a danger which is the outcome of ignorance. It is no more indelicate to write about the characters, properties and functions of the remarkable fluid of defense

than to speak about or describe the odor of the skunk cabbage, the namesake of the skunk in the vegetable kingdom.

If the skunk makes a complete discharge, emptying both glands, he is rendered quite harmless, until such a time as the glands become refilled. According to the majority of authorities, the fluid may be thrown by the animal in two distinct streams, spray-like in character, for a distance of eight feet. Upon a calm day or night the odor may be detected over an area of half a square mile, and if carried by the wind, for a distance of more than a mile.

How often the animal is compelled to empty the glands the writer is unable to state—that is, when the creature is not irritated in any way and there is no occasion for it to defend itself. Instances have been known where they have been kept as pets for a year or more, with not a drop of the fluid escaping, or there being the slightest evidence of the animal possessing such a disagreeable organ. If a weasel or a skunk is undergoing any pain, or is suddenly frightened or irritated in any way, they will emit the secretion, when the odor becomes very apparent.

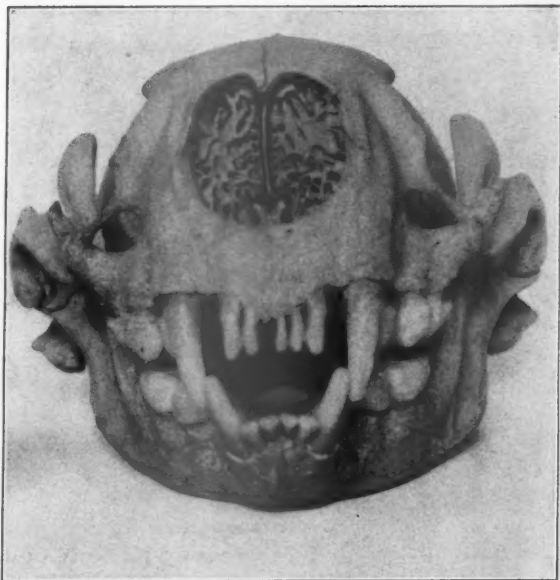


THE NORTHERN SKUNK

This northern form of the skunk tribe typifies the genus as a whole as they occur in the eastern sections of the country. The animal generally holds its tail as here shown, or else perfectly erect. Skunks are not very rapid runners.

The writer is more or less familiar with the glands as they occur in the weasels, sables and the mink, and has dissected them out in the latter animal, but he has never examined the odoriferous glands in the Fisher or Pekan, nor has he ever seen a good account of them anywhere.

In the Marten these glands are small, compared with



SKULL OF A SEA OTTER

This is the front view of a sea otter skull, a rare animal now, and almost extinct.

what we find in the Skunk. The animal has the power of throwing it only a very limited distance, and often it merely exudes upon the neighboring parts. In fact, it

would seem that it is by no means employed as a fluid of defense, and it is, in some instances, by no means disagreeable and rarely highly offensive. Dogs and other animals do not especially shun the Marten.

In the American sable or pine marten, the gland is not nearly as highly developed as in other mustelines—in



SKULL OF A FISHER

This is a fine specimen of the skull of an adult male fisher. Both of these fine skull specimens are in the collection of the National Museum, at Washington, and are published through the courtesy of the Division of Mammals of that institution. (Photographed by the Author).

the mink, for example; hence the characteristic odor is far less noticeable. In fact, captive martens become quite tame, and the odor given off by them is very mild. It is reduced to a mere musky taint, not altogether unpleasant to man—certainly it offers no protection for them



THIS FISHER HAS STALKED A RABBIT

There is a certain character about the drawing of mammals by Mr. Leon L. Pray which is unusual as well as attractive. This one of the Fisher is from a photograph by the writer of a plate in the work of C. B. Cory on "The Mammals of Illinois and Wisconsin." In some parts of the country Fishers are now entirely exterminated.

against their enemies. Passing to the weasels, ermines, sables and the mink, we again find these glands more highly developed, and the odor of their secretion more or less powerful when the animals are excited in any manner, as through fear or anger. The emission of the secretion is voluntary as in the case of the skunk; and, although not as offensive as in that animal, it is nevertheless very penetrating and extremely unpleasant. It is not as lasting as the scent of the skunk, and it is not in the least noticeable when the creatures are at rest and not aroused.

The scent of the secretion of the glands in the case of the mink is especially strong; ranking probably next to that of the skunk in its several characteristics; but to many this odor is entirely different from that of the skunk, and by no means disagreeable; it would not especially deter some from removing the animal alive from a trap or from capturing it by other means. The minks being largely aquatic by nature is another reason why their odor is not as likely to be perceived, as the glands would not be brought into use while the animal was in the water. Coues stated that "it is used with advantage by trappers, to increase the efficacy of their bait. It belongs to the class of musky odors, which, in minute quantities, are not disagreeable to most persons; and, indeed, a moderate amount of mink scent is less undesirable than the rank odor of the she-wolf for instance. The former is special and peculiar; the latter seems to convey all that is bad in the nature of the animal."



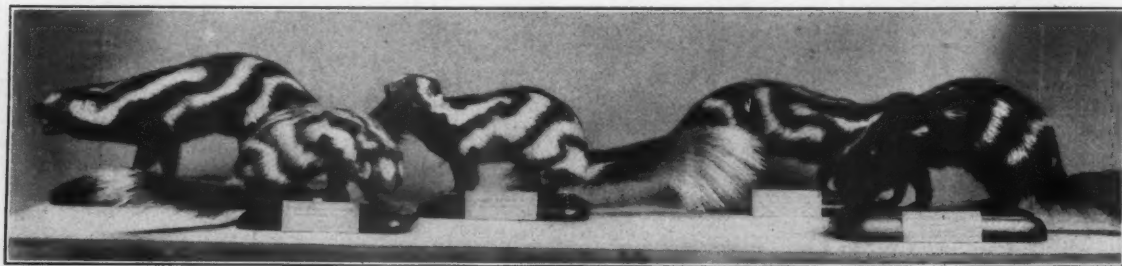
SKIN OF A YOUNG SKUNK

This skin of a skunk with broad white markings was collected and prepared by the writer; it was taken many years ago at Fort Fetterman, Wyoming, and is a western species.

With respect to the badgers, little or nothing has been done in the direction of description of the glands as they occur in the species in this country.

For the sake of completeness, we may now devote the remainder of this article to a consideration of these musteline animals—that is, to their habits, distributions and kinds; for, taken in its entirety, the family can hold its own with any other family of mammals in North America in the matter of the interest it has for us, and certainly in its economic importance. As a group of the order Carnivora, it is an unusually well defined one, made up of many species, and being represented in nearly all parts of the world with the exception of the Australian region. The most typical musteline mammals are the martens and weasels, while the other forms making up the family vary to a considerable extent, such as the otters, the skunks, and the badgers.

The belt in which the greatest number are found lies in the Northern Hemisphere, especially in the sub-boreal zone and in the northern girdle of the North Temperate. Typical weasels make up the great bulk of the mustelines, it being the largest genus or the one containing the greatest number of species; moreover, they have the widest geographical distribution. Weasels may be said to typify the family, and zoologists recognize all the way from fifteen to twenty genera as composing it. We have discovered that this family may naturally be divided into quite a number of subfamilies; some of these contain but a single genus, and this genus but a single



WESTERN SKUNKS ARE REALLY BEAUTIFUL ANIMALS

Of the many species of skunks in the United States none is handsomer than the western ones. Some are entirely black, with small white spots on their black bodies; others are marked as here shown, which is from a photograph by the writer of a row of five on exhibition in the Mammal Hall of the United States National Museum.

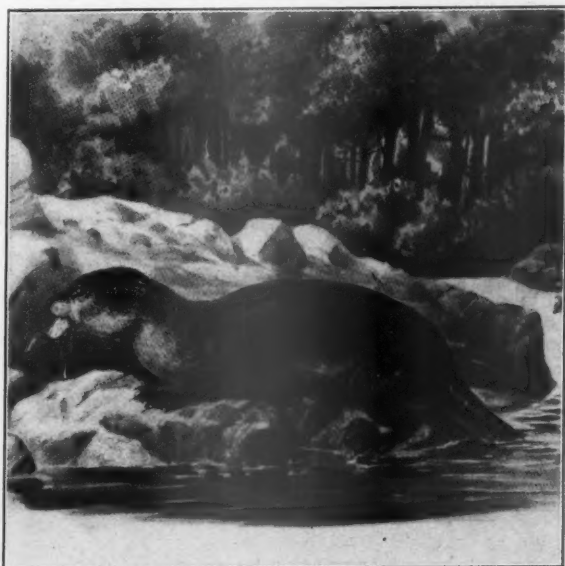




#### FISHERS ARE FOND OF BEING NEAR WATER

The name of the animal is a misnomer, as it does not catch living fish, but it will eat them when occasion offers. It has been known to kill deer and prey upon rabbits, foxes, porcupines and other mammals.

species. From man's earliest history down to the present time, the economic value of the family has ever been on the increase, and this has only slackened when, through man's agency, the animals giving rise to it have been, to a greater or less degree, destroyed and exterminated. During this rise and decadence, however, simply untold millions of the pelts have been collected, bought, sold, met the demands of fashion, formed food for billions of moths, been worn out, and gradually passed out of existence. To a large extent, this trade and this sequence of



#### OTTERS TYPIFY THE AQUATIC MAMMALS

Our common otter is now becoming very scarce; like its cousin, the mink, it is very fond of fish, and it is extremely expert in catching them. Note the webbed feet of the animal, which is from A. C. Gould's "Where to Find American Game."

things is still going on. The statistics of the sales of the pelts by the Hudson Bay and Canadian companies alone is something stupendous.

No family in the Class Mammalia is better defined than the present one, or more clearly distinguished through its zoological characters in the order Carnivora, to which it belongs. And, notwithstanding the great apparent difference between a badger and a weasel, or a skunk and a sea otter, the comparative anatomy of the group furnishes the best proof of the true relationships of its family members.

As to their place in the system, the writer is of the opinion that the musteline assemblage is, above all others, most closely related to the Bears (*Ursidae*), this



#### FINE PICTURE OF A BADGER

This remarkable photograph of the American Badger was made from life by Mr. Elwin R. Sanborn, and is here used by his permission. Note the median white stripe on the head of the animal, agreeing with what we see in some skunks.

through the family *Eluridae* (the Panda,) and primarily the Racoons. On the other hand, a more remote, though not so very distant a kinship, is seen in the dogs and their various allies.

Upon examining the main and anatomical characters, it would appear that this family is easily divisible into no less than eight subfamilies. Of these eight five are represented in the United States, the martens and weasels (one subfamily); the badgers; the skunks; the American otters, and the sea otters. Nine genera make up these five subfamilies—that is, the otters, the sea otters, three kinds of skunks and three in the marten group—as the minks, weasels and wolverene.

Various fossil forms of these animals have been discovered from time to time. The skunks are strictly of North American distribution, but widely known in other

(Continued on page 41)

## THE RED DRAGON

LEW SARETT

## I

Among the brittle needles of the pine,  
A harmless ember, casually flung—  
Smoldering in the tinder of the soil—  
Writhing crimson vipers  
Redly licking at the leaves,  
Bellying into the amorous wind  
With flickering venomous tongues,  
And sinking blue fangs in the heart of the night.

## II

Lo! blazing mane and streaming bridle,  
Bursting out of the lurid hills,  
A stallion,  
A livid-crimson stallion,  
A lightning-winged stallion,  
Crashing out of the billowing smoke  
On a flaming crimson trail.

A ghastly shriek in the canyon,  
An echoing moan in the pines,  
A wild red rush of flying red feet,  
And a hand at the charger's bit.  
A flame-shod foot in the stirrup,  
A phantom hand on the reins.  
And lo! a rider in scarlet,  
A swaggering rider in scarlet,  
The ghost of a Red Dragoon!

A war-brawling wild cavalier,  
With a cackle sardonic and grim,  
A bite in his wind-whistling arrows,  
And a blight in his lethal breath!—  
Careering he charges the timber  
With resin-hot lances of gold,  
And he shouts a demoniac laughter  
When his blood-bleary eyes behold,  
Scurrying out of the riotous hills  
A rabble of shadowy things,—  
Oh, the clatter of whistling deer,  
The patter of feet in the rushes,  
The bleat of the panting fawn!—  
Flung out of the timber like leaves,  
Like burning leaves in the wind  
Whirled over the hills and the valleys  
And out to the fringes of night.

A bloody-gripped red cavalier!  
A blasphemous dread cavalier!  
Gallop into the blue-templed hills  
With a wild ribald song on his lips,  
And a curse for the gray-bearded pines  
That complain of his searing hot breath;  
Sundering their boles with a swift molten fist,  
Cleaving their suppliant branches,  
With a jeer as they go to a thundering death  
Enshrouded in bellowing flame,  
As they wing their gray souls on the spiralling smoke  
Up to the ultimate stars.  
Gallop over tumultuous clouds  
To tilt at the livid-lipped stars;  
Gallop on through the turbulent sky  
And over the rim of the world.

## III

Oh, the toll of the rider in scarlet!  
The toll of the Red Dragoon!  
Windrows of charred black bones  
Strewn over a gutted land;  
Skeletons,—once draped in the green  
Of leaf and the silken sheen of moss,—  
Bare skeletons, bitter of laughter,  
Clattering through long white nights,—  
Gray ghosts in a land of gray dead dreams,  
Playing the bow of the wind futilely  
Over the once resonant fiddle,  
Striving again to beguile old melodies,  
Bemoaning the old sweet Aprils.  
O, fiddlers, scratching over the shattered box,  
And scraping over the tattered strings,  
Pray, conjure me a tune!—the low call  
Of the last singing bird that is gone!

## FORESTRY IN NEW JERSEY

(Continued from Page 24.)

made possible what state support has not yet been willing to undertake, the beginnings of an adequate fire lookout system and an effective patrol. The fire risk is less in the hardwood forest of the northern hill country than in the pines of the southern sandy coastal plain. But the extreme advantage from every angle which the record shows to North Jersey is not wholly or even mostly due to this, but to the fact that Federal aid has here made more adequate facilities available, than State initiative has granted elsewhere or anywhere in the State.

The New Jersey situation differs in many ways from that in many places. Methods and means required in the wilderness such as for the conditions met in the north woods or on the Pacific Coast are not applicable where steam and electric railroads and good public highways penetrate the forests in every quarter. The treatment required for safeguarding woodlands which are all easily accessible and continually used as the playground of the densest organized population centre in the world, is different from that demanded in the trackless wilderness of the "Big Country. In a section where ignorant, though well intentioned city populations and swarms of new home-makers fresh from foreign shores create the fire problem while at work or play, and where the forest industry is at low ebb because of century long forest abuse and neglect, a different approach is needed than that available where timber spells livelihood to and woodcraft is the primer of a great part of those who frequent the woods. Yet everywhere it is people with whom we must deal, it is public opinion which must prevail against the needless waste by forest fire, and folks must learn to hate and fear the scourge of fire so that their interest and their activity may swallow up the Arch Fiend of the Forest—Fire.

THE production of spruce lumber and pulpwood in Canada in 1919 reached a value of \$72,000,000, the value of the lumber being \$44,000,000 and of the pulpwood \$28,000,000. About one-third of Canadian standing timber is estimated to be of spruce. The amount lost by fire and insects during the last two decades is said to have far exceeded the amount used.

A TON of sandalwood yields an average of 100 pounds of oil.

THE bamboo sometimes grows two feet in 24 hours.

We cannot succeed perfectly but we can and do strive and hope. Our success requires the support of all your public-spirited friends. Nominate them for membership.

There is strength in numbers—the more real Americans we have talking about forestry, the more successful become the activities of your Association. Talk forestry to your friends.

# FOREST RECREATION DEPARTMENT

Arthur H. Carhart, Editor

## Minimum Requirements In Recreation

**D**EATH and Destruction consort with Play in many of our forest recreation areas. They invade Play's realm only because preventative measures against them are not taken. They should be naturally foreign to recreation grounds but inevitably come if the laws of sanitation and fire prevention are disregarded.

Do you walk in the open? Have you auto-camped in rural forest play places? Have you picnicked under leafy shade trees or spicy pines and firs where the outdoor lure calls you to come and linger? If you have I want to talk to you, or if you, or your friends ever expect to vacation in our great forested areas, this message is for you.

Consider the destruction wrought! Fire alone each year destroys \$17,150,000 worth of timber. Money expended in fighting fire in 1920 was more than \$1,000,000. Business yearly suffers to the extent of \$400,000,000!

Good business and common sense demand stoppage of this waste. Fires originating on camping areas constitute a not large portion of the fire loss; every bit of prevention should be brought into play to stop even this portion of the yearly fire toll.

Another phase of this problem is the fact that a camp-

ing spot once burned by fire is never again desirable recreation grounds. As camp spots are often in the most pleasing locations this loss is many times larger than if the same amount of land, not so used, were burned over.

The timber loss plus the aesthetic loss in smoke when a camp ground burns is greater than the price of prevention. Have we in the great majority of cases taken preventative measures on these areas? We have not.

The human life loss is more appalling. Every year deaths occur which might have been prevented with the most elementary sanitary provisions. A very simple spring development costing in the neighborhood of twenty or thirty dollars might save several lives.

Doctors universally testify that the typhoid rate increases appreciably when camping time comes around. It is so common a thing that it is called "vacation typhoid."

In the National Forests of the West the death rate is probably

the highest. Here there are few sanitary installations. No safe water supply is available at many camps and people die from drinking out of open streams that appear crystal pure.



**GOOD CAMPERS**

The campers in this picture have built their own fireplace in a good location. But many who are not versed in outdoor usage will not do so. A built fireplace will direct their firebuilding and perhaps prevent forest fires.





FIGHTING A FIRE

This man with another worker could build about seven small fireplaces a day. One of those fireplaces might prevent such a fire as this.

This annual casualty list cannot be charged to the blindness or inattention of the Forest Service. Effort has been made in making camping places safe. Funds have not been appropriated to carry on this much needed protection program. No one realizes the dangers better than the Forest Service, but without authorization and funds with which to do this work they are helpless.

Statements from Boards of Health show the real menace to life lurking in this lack of sanitation in camping areas. During the past three years there were 331 deaths due to typhoid in the one state of Colorado. There were 79 of these in the city of Denver. Every case reported from Denver was traced directly to some outside infection. None came from the city water or milk supply. Nearly all could be traced to a camping trip in the mountains.

The same ratio of loss will not hold for the entire state, but beside these 331 deaths it is safe to estimate that there are scores of cases contracted by tourists from outside the state that are never reported to the Colorado Board of Health. It is another point to consider that in this list only deaths from typhoid are listed and not the total number of cases. Still another fact is that typhoid statistics given represent only one water born disease. Paratyphoid, dysentery and others yearly take toll

of life or incapacitate. One other report will suffice to illustrate the condition in other western states. The state of Washington reports for the last three years as follows:

	Typhoid	Enteritis	Goitre	Dysentery
1918 .....	102	296	47	0
1919 .....	55	249	41	0
1920 .....	76	502	62	16
1921 .....	16	69	24	0

(Including Month of April)

The bulk of our western mountain playgrounds are in National Forests. Other magnificent areas are in the National Parks. While not all of the typhoid and allied death causes reported to the state Boards of Health can be traced to the use of contaminated water while the patient was on a camping trip in these areas, it is certain that if a check were possible scores of deaths each year would be directly chargeable to

the lack of proper sanitation in these mountain playgrounds. Auto touring is becoming more and more popular. The highway leads to open country and the big timber calls more people each year to the mountain places of the west. With this condition existing there is increasing need of proper preventative measures against fire and disease. With the increase of population in a forest camp comes the increase in menace from these two agencies.



THE FIRE DEMON'S SMOKE BANNER

"Preventative Medicine" is a rational method now advocated. "An ounce of prevention is worth a pound of cure." A fireplace will perhaps be the ounce of preventative medicine to cure the fire ill at some point in our forests.

The life loss is just as preventable as the fire loss. This is the sad feature of reviewing the past. Not only millions of dollars worth of timber and other values have been ruined because of inadequate fire protection in camping areas but millions of dollars worth of lives have been taken also—if you can so value human life.

There are minimum standards which every camp should meet. Without these the camp is unsafe; conversely, with the most simple and practical fire and sanitation measures in operation, the camp is as safe as a residence in the average small town or village.

What are the minimum requirements? And what is their cost? For if the cost for protection is less than the loss only the grossest indifference will prevent the allotting of funds for the purpose of stopping our yearly loss of property and life.

One of the most effective fire prevention agencies is a small fireplace structure. The entire use of an area can be directed by proper placement of this recreation improvement. If the fireplaces exist people will use them if rightly located. By placing them in a perfectly safe yet pleasing place there is no danger of the fire built in them getting away. The very form of such a fireplace will encompass the fire and not allow it to spread.

A guard on a public camping place costs from seventy to one hundred and twenty-five dollars a month. One fireplace costs from three to seven dollars. One fireplace may prevent the forest fire that the guard could never stop.

Six dollar fireplaces have been built on certain of the western forest recreation places. They are used wherever properly placed. In good locations they will almost eliminate the forest fire hazard from a camp ground. They are made of native rock, half a sack of cement and nine steel bars, a half inch thick and sixteen inches long. Two twelve-inch walls rising from a stone and concrete base. These walls are thirty inches long, about six inches thick and twelve inches apart. The steel bars are built into the wall forming a grate about nine inches above the base. Nothing could be more simple or more



NEITHER SANITARY NOR SIGHTLY

Such a spring as this while it is not the old "sunk barrel" type is not a guarantee of pure water. The development may be good for stock on the range but not the best thing for the tourist camper.



SANITARY BUT NOT SIGHTLY

This spring development fulfills the demands of being sanitary. But an addition of a little time and money would have made it attractive also.

serviceable, nor is there any one factor which could do more to prevent campfires spreading.

Consider this as strictly a fire prevention measure. A real service to the camper exists but eliminate that from this reasoning. A fund of \$60,000 would build more than ten thousand fireplaces. If in five years of service they would yearly prevent twelve fires costing a thousand dollars each for suppression and loss they would pay for themselves. This estimate is not unreasonable. Such a fund would go far towards making safe the western camping areas in our National Forests. Equal appropriations for several years would make all western forest camping places reasonably fool fireproof.

The loss of life centers around

water supply. The drinking of stream water is the only alternative offered the camper at thousands of camps in the west. He has no choice about the matter. No other water supply is available.

Two measures are necessary to make and keep the water supply clean. First it is essential to supply properly located and properly constructed sanitariums. Human occupancy demands their presence. Otherwise rains will inevitably wash human excrement into streams used for drinking purposes. Rules or signs cannot stop human body functions, but sanitariums will stop insanitary practices.

While it is reasonable to expect the presence of clean, well-placed sanitariums will prevent contamination of streams, another simple development will make clean water doubly sure. A box which is essentially a miniature filter arrangement built on the principle of city water supply filters should be sunk out of sight in the bed of a stream and water conducted from it to the camp supply point. Water protected from contamination by convenient sanitariums will be doubly safeguarded by passing through a foot or more of sand or charcoal in this arrangement. Any slight contamination will stand little show of passing through this box and to the lips of camp visitors.

Sanitariums can be built at various locations in a satisfactory manner for thirty dollars or less. A maximum cost might be sixty dollars per structure. A thousand would cost a maximum of \$60,000, or a cost equal to the fireplace estimate. A ratio of six to twelve fireplaces to one sanitary has been found good so that a thousand camp units could be constructed in our western forest play places for \$120,000.

Probably a filter box has never been built for service in our western forests. There never has been Federal money available for such life savers, yet they would cost in the neighborhood of only fifteen to twenty-five dollars each. An average of twenty dollars would show that one pure water supply for each group on the "10-1-1" basis would bring the total cost of a thousand camps up

to \$140,000. The "10-1-1" combination is ten fireplaces to one sanitary to one water development.

There are three minimum "prevention" needs. The first is the fireplace, properly built and properly placed. The second is a good sanitary for each group as well built and placed. The third is additional assurance of good water supply through the installation of a filter box.

As compared to the loss from fire each year this total cost is very small. One per cent of the annual fire loss exceeds the entire cost of construction of these permanent improvements.

If we were to place the human lives on a dollar basis this loss alone would justify the spending of \$140,000 on camp development. Insurance companies, public service corporations and like institutions figure the settlement price of a human life at about \$5,000. On this basis \$1,655,000 were lost through typhoid fever in the one state of Colorado during the past three years, no small per cent of this due to insanitary conditions in the mountain areas. Ten per cent of the loss of life in one state during three years reduced to the dollar basis exceeds the entire cost of a thousand camps supplied with "minimum protective requirements."

The recreational use of all forest areas can never be curbed through laws or edicts. No one would wish to do that in our national or state properties. People will come more and more to the outdoor places. They will come in numbers causing congestion at many points. Only through the

installation of proper improvements will these camping places be made safe for human occupancy. Most of our existing forest camp grounds lack proper protective improvements. The cost of each unit or each camp is nominal when compared to the service in protection from fire or life loss.

All rural play areas present these problems of fire prevention and sanitation. A minimum standard must be met in development to make them safe. Any public organization which has charge of such areas should be



BOTH SANITARY AND SIGHTLY

This spring guarantees pure water supply at all times. While it does not show, there is considerable construction work insuring this, but it is all masked by a native stone wall set without cement and in the cracks of which moss and other moisture-loving plants are growing.





A SHELTER AND FIREPLACE

This structure will localize the camping on any grounds and by doing that localize the fires built. By placing it in a proper location the building of fires can be readily regulated.

responsible to the people for loss of property through fire or life through insanitation. They are accessories before the fact when they do not provide for protection in these two fields if able to do so.

The most outstanding case of protective needs lies in the National Forest camps of the west. The Forest Service has this problem to meet. But they cannot solve it without recognition and provision for these needs by Congress. A modest annual appropriation for recre-

ational development for the next few years will save many dollars and lives.

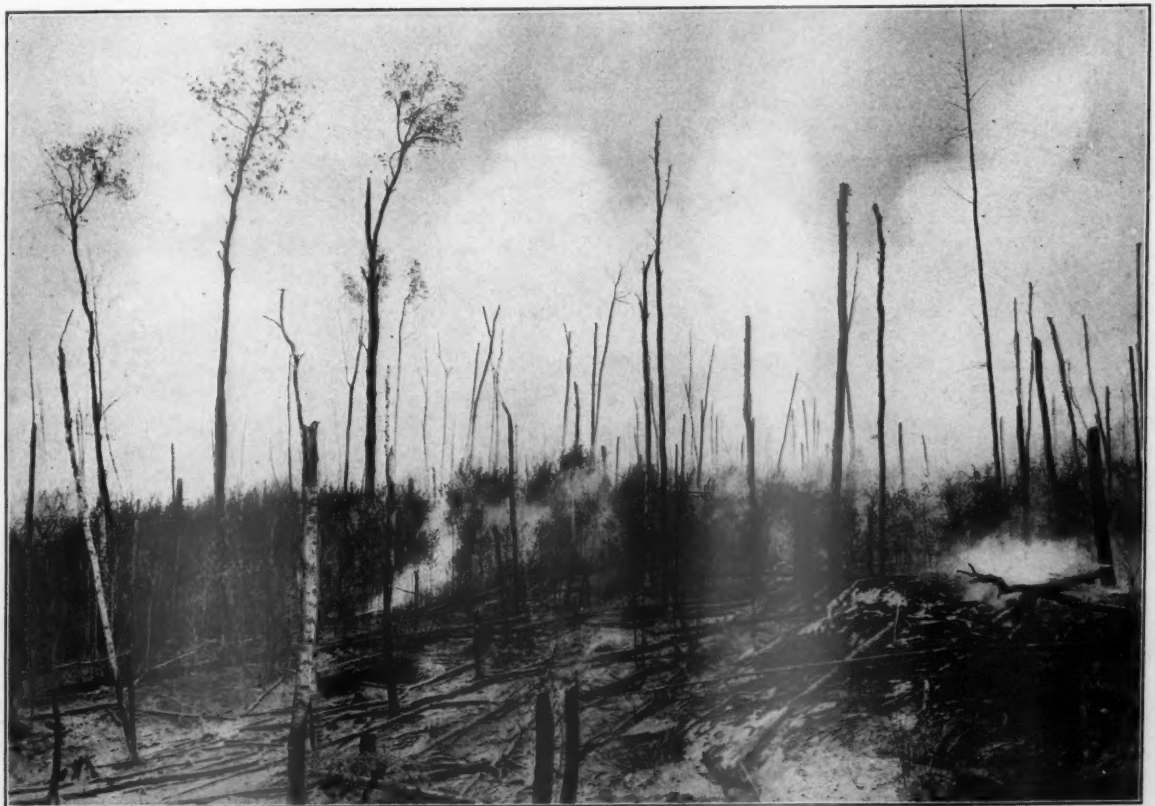
The National Park Service meets the same problem. Here again the need must be recognized and provided



A LOW-COST FIREPLACE

This is not only one of the most serviceable of all camp improvements, but it saves its cost in lowered patrolling expenditures alone.

for. State Forests and Parks, and great rural parks of municipalities have developed the same problems. Park and forest boards of these divisions of government must



DESOLATION

No one would argue the fact that it would be a good investment if one six dollar fireplace would prevent such a disaster as this.

provide in some manner adequate protective features.

The annual loss of fire has been computed. The annual loss from disease is strikingly indicated. Both can be prevented in all rural recreation areas by the installation of the minimum fire and sanitary preventative measures. These are simple. They are, properly placed simple open fireplaces; well constructed properly located sanitariums, and fool-proof, pure water supplies.

All people who directly or indirectly use the outdoors should insist that

public agencies charged with the care of rural recreation areas see that these standards are met. These develop-

ments will not make finished camps for complete camping service, but the public using such camps will be insured against fire

loss and that greater loss—deaths from insanitary conditions

Finally, these sinister conditions set forth are not visionary. They exist. A brief survey of the situation will convince the most skeptical that there is need of action. Action, and funds to back it, we must have if the Nation is to go into the out-of-doors secure from fire loss by campfires and life loss for Americans! (Photographs by U. S. Forest Service.)



A DESTROYING FIRE

The cost of one such fire in loss and funds spent in fighting it would build many preventative improvements in many camps. One such camp might eliminate such a fire.

from impure water supply. Lets have decent forest camps for Americans! (Photographs by U. S. Forest Service.)

## THE RUSSO-AMERICAN OAK

IN the "Hall of Fame" is the Russo-American Oak planted in the White House grounds April 6, 1904, by President Roosevelt. The relations between this country and Russia have changed somewhat from the time when acorns from the tree at the tomb of George Washington were planted in the grounds of one of the palaces of "His Imperial Majesty, the Emperor of All the Russias." The tree in the White House grounds is still standing, and as far as known the trees in the palace grounds may be but the government of "the emperor of all the Russias" has changed to a great extent. Much history has been written since Charles Sumner, senator from Massachusetts, sent the acorns from the tree at Mt. Vernon to the Czar of Russia. These trees grew and acorns from them were in turn sent back to America and on April 6, 1904 President Roosevelt, Secretary Wilson and Secretary Hitchcock planted this Russo-American oak on the lawn east of the west terrace of the White House. Little did they know that on another April 6, the United States of America would declare war on Imperial Germany, a war in which Russia would be involved and as a result of which "the emperor of all the Russias" would be dethroned and pass into an exile and death around which much mystery has been thrown.

In the files of the army we find the following notation made by E. A. Hitchcock.

"While ambassador at the court of St. Petersburg I made inquiry with respect to the disposition of some acorns that the Hon. Charles Sumner, while United

States Senator from Massachusetts, is said to have sent to His Imperial Majesty the Czar, the acorns having been taken from a massive oak shading the original tomb of Washington at Mt. Vernon.

"These acorns were planted on what is known as 'Czarina Island', which is included in the superb surroundings of one of the palaces of His Imperial Majesty near Peterhof, and there I found a beautiful oak with a tablet at its foot bearing a Russian inscription, the translation of which is as follows:

"The acorn planted here was taken from an oak which shades the tomb of the celebrated and never-to-be-forgotten Washington; is presented to His Imperial Majesty, the Emperor of all the Russias, as a sign of the greatest respect—By an American."

"I was fortunate at the time of my visit, which was in the fall of 1898, in finding a number of acorns on the ground that had been dropped from this historic tree. Gathering a handful, I sent them home, and secured from the seed thus planted a few oak saplings, one of which is here and now planted, with the kind permission of President Roosevelt, in the grounds of the White House, while another is to be planted in a few days nearby its grandparent, which is still in existence at Mount Vernon, both of which young trees, I hope, will reach such age and strength as will, for years to come, typify the continued friendship of the Governments and people, respectively of the United States and Russia, each for the other."

# EDITORIAL

## SHALL THE FOREST SERVICE BE ELIMINATED FROM ALASKA?

THE time has come for plain speaking about the forests of Alaska and the efforts to remove them from the jurisdiction of the Forest Service. Very wisely about 1902, the Government set aside the bulk of the dense spruce and hemlock forests that fringe the coast and cover the islands of south-eastern Alaska. These forests comprise one of the largest bodies of accessible timber in our country. No less than seventy-five billion feet of merchantable timber stand in the Tongass and Chugach National Forests, enough to furnish annually over one billion feet of pulp wood and other material to our industries for all time if the forests are handled under the right methods of forestry.

Under the jurisdiction of the Forest Service these forests have not only served local requirements for lumber, but already two large sales of timber have been made for the manufacture of pulp or paper in Alaska, and there is excellent promise of several additional large sales which will establish new manufacturing enterprises. Just at the time when the Forest Service is succeeding in making the forests a large factor in the building up of this frontier region under conditions which will insure the perpetuation of the forests and thereby the permanence of these new industries, the proposal is made in Congress to cut off the administration of the Alaskan forests from the Forest Service and place them in untried hands in the Interior Department. This proposal is contained in the New Bill, which at the recent hearings before the Senate Committee on Territories was strongly endorsed by the Secretary of the Interior.

The argument advanced in favor of the Bill is that logic requires the consolidation of all federal land matters in Alaska under one Department in order to avoid duplication. In point of fact there is no real duplication at the present time. The Forest Service administers the lands and provides for the use of the resources, and it does this acceptably to the people of Alaska who are directly concerned with the public undertaking. The legal matters pertaining to land titles are handled by the General Land Office whose functions are primarily those of land disposal and titles. The amount of this class of work in the National Forests of Alaska is insignificant compared with the business of administering the land for timber production and other uses. The two lines of work are so distinct that there is no embarrassment from duplication or overlapping. On the other hand, nothing could be more illogical than the proposal to eliminate the Forest Service from Alaska, for it would immediately be necessary to build up in the Interior Department a new forest bureau which would be a dupli-

cation of that already in the Agricultural Department. There would thus be two federal Forest Services handling identical matters and involving the worst sort of duplication of effort and unnecessary large overhead costs. The change would be fraught with grave danger to the public interests, for the forests would be taken from a bureau that has carried the work for over fifteen years, has established a competent and efficient decentralized organization, has developed sound and workable policies, and has the confidence of the country at large. The forests would now be taken from this competent organization and placed in the hands of a Department which must build up a similar bureau to administer them. Inevitably the proposed action would result in changes of policy as well as in duplication of effort. Two government policies in forestry certainly would lead to conflict and public injury. The next step naturally would be to transfer the entire Forest Service from the Department of Agriculture to the Interior Department. This was shown in the editorial appearing in the October number of *American Forestry* to be a step of great danger to the National Forest enterprise and to the whole movement of forestry in the country.

For many years efforts have been made to break down the National Forests of Alaska. At one time it was the frank proposal to abolish these Forests and to throw open the lands to the old system which in the 19th century was accompanied by so much fraud and scandal. Later the proposal was to abolish the Chugach Forest alone. Then came the proposal to have all federal matters in Alaska, including the National Forests, handled by a politically-appointed and substantially irresponsible commission. Now comes the proposal to eliminate the Forest Service from Alaska and to place the work, which is being so efficiently done, under another Department. It is unnecessary to draw any inferences regarding the purpose of the present move. The fact of importance is that the effect would be to lose to the public the great value of the National Forest system that is operating so well in the west and in Alaska itself.

The effect of this move on the National Forest system may easily be conceived. It would jeopardize the whole enterprise which has been built up during the past fifteen years or more and is serving in so many ways the public interests. The welfare of the public, in our opinion, demands that the Alaskan National Forests remain under the jurisdiction of the Forest Service in the Department of Agriculture, and we urge the vigorous support of this principle on the part of our readers and of the country at large.



## NEWSPAPERS ENCOURAGE FORESTRY

**S**ERVICE has become the big word in many newspaper editorial rooms throughout the country and the American Forestry Association, at the opening of a new year, wants to be the first to extend congratulations to the people of those states in whose service so many newspapers have enlisted. Many examples come to the Association of a feature of this service which means the forwarding of the importance of forestry in the minds of the readers. Forest products are the backbone of all business. It is the furthering of this thought that has become the cornerstone of the service.

The Milwaukee Journal for example is doing a real work for the state of Wisconsin. The Journal sends a bulletin sheet to every newspaper in Wisconsin every week. This bulletin sheet puts before the papers information about the campaign for forestry and other conservation measures in their state. The bulletin is now demanded by chambers of commerce, civic clubs and women's organizations throughout the state.

The Chicago Tribune makes a big feature of forestry matters and is carrying on an educational campaign day by day for forestry and for the planting of memorial trees.

The Courier Journal of Louisville has long raised its voice for the things for which the American Forestry Association stands.

The Democrat-Chronicle of Rochester, The New York Evening Mail, the Boston Transcript, the New York Times, the Trenton, N. J. Times—but space forbids anything like a newspaper directory, so we can but mention here and there the leaders in the service of the state. One

conspicuous example is the Pittsburgh Post, another is the Detroit News which has sent out a quiz sheet to ascertain just what people think should be done about forestry. The Grand Rapids Herald tells how a trade extension tour brought to the attention of Grand Rapids business men the miles upon miles of unproductive forest land in the state.

The St. Clair Republican says we have heard about forests "since Hector was a pup" but are "we going to continue to crucify the press of the United States upon the cross of paper package goods and go back to the hammer and stone chisel for education?" Added to this the Sault Ste. Marie News says "Mr. Pack speaks truly when he says idle land in this country must be put to work and the quicker the voice of the people is heard in this connection the better for all concerned." The Bay City Tribune takes the view that "the present generation will not see it but the next will, that is the exhaustion of the standing timber of the United States. Lumber will be a luxury in the next generation."

In quoting the New York Financial Chronicle, the Tawas City Herald points out that "the gospel of forestry and reforestation is not a matter of times and seasons; it is for all times and all seasons." Such views from a state where they know what they are talking about certainly call for action such as the Association is campaigning for.

So it goes all along the line. As never before the newspapers are cooperating with the American Forestry Association and pushing the idea of forestry needs with the result that the association's work is more widely known and more widely encouraged and commented upon than ever before in the forty years of its life.

## THE PETRIFIED FOREST

**O**NE of the greatest wonders in the geological world is the petrified forest of northern Arizona.

This forest is in the middle of the Painted Desert which received its fanciful name from the many opalescent colorings of its clays, shales and sandstones.

The trees are of the coniferous variety. Some had attained the height of two hundred feet; many were over one hundred feet. Diameters ranging from one to four feet. Trees, and yet not trees! For now they are wonderful specimens of agate, jasper, and chalcedony—in the form of trees! Much of North America's scientific data on archaeology, anthropology, climatology—that today are considered highly authentic—has been ferreted out from an exhaustive research among these fallen trees.

Fallen and petrified. Relics of the Glacial Period, when all life and vegetation bowed before the merciless ice-rivers which swept down from the North.

Scientists believe that immediately following the ice flow in this western part of the continent there was a volcanic eruption of lava which covered the trees, and

aided by the action of the air, petrified and preserved them. Since neither skeletal nor fossil remains have been excavated in this Desert, it is safe to deduce that the occurrence took place long before the time of man upon this continent. One geologist puts it at least fifty million years ago!

Mystery and more mystery surround these fallen monoliths. Not all their secrets have they yet divulged. But like the famous Forest Bed of Gromer at Norfolk, England, each year more and more important data are being gleaned. Visitors to this spot experience a queer, uncanny feeling. There is something forbidding at the sight of so much devastation; as forbidding as the entrance into the famous Black Forest of Germany. Yet, after all, something compelling. The handiwork of High Wisdom. Sly hints to those of the Present, to those who have eyes to see—of who and what, of who not, and what not, dwelled here in the Past.

To protect this valuable and sacred spot from the overzealous curio seekers, the Government has set it aside as a National Reservation.—*Viola M. Overman.*

# PROPOSED AMENDMENTS TO THE BY-LAWS

The following amended by-laws of the American Forestry Association will be presented to the members for adoption at the annual meeting to be held in Washington, D. C., on January 26, 1922.

The amended by-laws were submitted with the following letter to the Board of Directors at a meeting on December 8, 1921, by a committee composed of Col. W. B. Greeley, Col. Henry S. Graves, F. W. Besley, Philip W. Ayres, Henry S. Drinker, Chester W. Lyman, Nelson C. Brown and P. S. Ridsdale, and with some slight changes in the wording, were adopted:

Washington, D. C., December 2, 1921.

To the President and Board of Directors, American Forestry Association, Washington, D. C.  
Gentlemen:

The Committee designated by President Pack to consider and recommend a revision of the existing by-laws of the American Forestry Association, respectfully rec-

ommends the adoption by the Association of the following by-laws. For simplicity and clarity it has seemed preferable to recommend a complete set of by-laws, in which certain changes have been incorporated. The purpose of these changes is two-fold:

(1) To put into effect the general principles approved by the Board of Directors on August 30, 1921, following the recommendations of the conference committee.

(2) To improve the language and scope of the by-laws in certain other particulars, in the belief that the present opportunity for revision should be utilized to render the by-laws as adequate and effective as practicable in all respects.

Two special sections have been included to provide for changing over the Association from the existing to the new procedure in the matter of elections (Section 3 of Article 4), and in the terms of the existing Directors of the Association (Section 2 of Article 6).

## The Amended By-Laws

### ARTICLE I—Name

The name of this Association shall be "THE AMERICAN FORESTRY ASSOCIATION."

### ARTICLE II—Objects

The objective of the Association is to bring about a better handling of the forests of the country in order that these may render their highest service in the economic, industrial, and social development of the nation. The Association aims to foster investigation, research, and experimentation in the science of forest production, management, and utilization; to assemble information regarding the economic and industrial aspects of forests and regarding the service of the forest in protecting lands and waters; to secure from the forest a larger service in outdoor recreation, in perpetuating wild life, and in other general public benefits; to encourage and further the practice of forestry by individuals, municipalities, states, and the federal government; to promote educational, legislative, and other measures tending to the accomplishment of these objects; to publish a magazine and other literature for the education of the public as to the meaning and importance of forestry and for the dissemination of a knowledge of forestry in its various branches; to place before the people of the country various problems and issues in forestry and to forward, in the interests of the public, specific policies of forestry; to aid in the coordination of the efforts of state forestry associations and other organizations interested in problems relating to forests; to establish and maintain a library; to acquire by purchase, gift, devise or bequest, and to sell, maintain and operate forests and forest lands, for the furtherance of the foregoing objects; to acquire by purchase, gift, devise or bequest such property, real or personal, and to erect thereon such building or buildings, as may be necessary or advisable in the promotion of these objects, and in general to

do and perform all things necessary to further the foregoing objects.

### ARTICLE III—Members and Dues

Section 1. Any person or organization may become a member of the Association upon his or its application for membership being approved by the Secretary.

Section 2. There shall be seven classes of members:

(1) Honorary Members, who shall be such individuals as may be elected by the Board of Directors because of their connection with other forestry associations or their interest in the aims of the Association.

(2) Patrons, who shall be individuals or organizations who shall contribute One Thousand Dollars or more at one time to the permanent fund of the Association.

(3) Life Members, who shall be individuals or organizations who shall contribute at least One Hundred Dollars at one time to the permanent fund of the Association.

(4) Sustaining Members, who shall be individuals or organizations who shall pay annual dues of Twenty-five Dollars.

(5) Contributing Members, who shall be individuals or organizations who shall pay annual dues of Ten Dollars.

(6) Subscribing Members, who shall be individuals or organizations who shall pay annual dues of Four Dollars.

(7) Annual Members, who shall be individuals who shall pay annual dues of One Dollar.

Section 3. Honorary Members, Patrons and Life Members shall be exempt from the payment of annual dues.

Section 4. The dues for the ensuing twelve months shall be payable when an application for membership is approved and annually thereafter. The membership of all those in arrears for one year shall automatically cease. The Board of Directors, however, may, in their discretion, remit the dues of any member.

Section 5. All members, except Honorary Members, shall be entitled to one vote

each at the meetings of the Association, or by mail as so provided, and to hold office therein.

Section 6. The periodical magazine published by the Association shall be sent regularly to all members except annual members, its price being included in the dues. The price of the magazine to non-members shall be fixed from time to time by the Board of Directors.

### ARTICLE IV.—Board of Directors

Section 1. The Board of Directors shall consist of fifteen elected members together with the President and Treasurer of the Association serving as ex-officio members. It shall have the direction and management of the affairs of the Association and the control over and disposition of its funds and property. All members, except Honorary Members, shall be eligible as directors.

Section 2. The Board of Directors shall select each year a Committee on Elections, whose names and addresses shall be published in an issue of the magazine not later than during the month of October. The Committee on Elections shall consist of three members of the Association in good standing for at least three years, who are widely known for professional or industrial attainments or public service in forestry, and who represent as far as practicable the professional, industrial, and public interests embraced in the work and objects of the Association. Not more than one member of the Committee on Elections shall be, at the time of selection, an officer of the Association other than Vice President. Suggestions for nominations for any officer of the Association to be elected at the next annual meeting may be submitted to the Committee on Elections by any member of the Association; nominations for such officers may be made by not less than twenty-five members of the Association, signed by the members submitting them. All suggestions and nominations should be addressed

to the Committee on Elections at the main office of the Association and must be received by the Committee on or before November 1. The Committee on Elections shall nominate a candidate for each officer of the Association. The candidates nominated by the Committee on Elections, together with any other nominations made by not less than twenty-five members of the Association, which must have reached the Committee on Elections prior to November 1, shall be published in the December issue of the magazine, with the names of the members of the Association making the nomination appended to the nomination of any such candidates. The Secretary of the Association shall cause a ballot to be printed containing the names of all candidates nominated by the Committee on Elections and by any group of twenty-five or more members of the Association as hereinbefore provided and shall mail such ballots to all members of the Association having the right to vote at least four weeks in advance of the annual meeting. The members of the Association, except Honorary Members, shall elect the officers by mailing to the Secretary in sufficient time to be received one week before the annual meeting a ballot containing the names of the candidates to be voted for. Every ballot shall contain the name and address of the member submitting it. The ballots shall be counted by three tellers appointed by the Committee on Elections, who shall decide any question as to the ballots submitted and who shall officially certify the total vote cast. A majority of the ballots cast shall be sufficient for election.

Section 3. Immediately following the adoption of these By-Laws, the Board of Directors shall designate a Committee on Elections to conduct nominations for all officers to be elected for the year 1922 and shall announce such Committee before the adjournment of the annual meeting. Suggestions for nomination by any member or nomination for such officers by any group of twenty-five or more members shall be submitted to the Committee on Elections in accordance with the foregoing procedure not later than February 10, 1922. The Committee on Elections shall cause all nominations duly submitted, together with its own nominations, to be published in the March issue of the magazine; and a ballot containing the names of all candidates nominated shall thereupon be sent to every member of the Association, except Honorary Members. Ballots must be received at the office of the Association within four weeks from the mailing thereof by the Secretary; such date to be promptly certified by him to the Committee on Elections. Tellers shall be appointed by the Committee on Elections and shall report the vote to the Board of Directors which shall announce the names of the officers elected in

the next issue of American Forestry and notify such officers by mail.

Section 4. Any vacancy among the officers, whether occasioned by death, resignation or otherwise, may be filled for the remainder of the year by the Board of Directors by ballot at their next meeting after the happening of such vacancy. If a Director shall be elected as President or Treasurer of the Association, the vacancy in the Board of Directors thereby created shall be filled for the balance of the year in the regular manner.

Section 5. Seven members of the Board of Directors shall constitute a quorum for the transaction of business.

Section 6. Meetings of the Board of Directors may be held, either at the office of the Association in Washington, D. C., or at such other place in the United States as the President may determine. Meetings of the Board shall be held upon five days' notice, whenever called by the President or by three members of the Board, and a meeting of the Board should be held at least once every three months.

#### ARTICLE V.—Committees

Section 1. *Executive Committee.* The President may appoint seven members of the Board of Directors to act as an executive committee, which shall have and exercise such powers during the intervals between the meetings of the Board as the Board may delegate to it.

Section 2. *Finance Committee.* The President may appoint three members of the Board of Directors to act as a finance committee in advising with the Secretary and Treasurer with reference to financial matters, and to exercise whatever powers are conferred upon it by the Board of Directors.

Section 3. The annual financial report shall be printed in the next issue of the periodical magazine published by the Association after the annual meeting.

#### ARTICLE VI.—Officers

Section 1. The officers of the Association shall be a President, twenty-one Vice Presidents, fifteen elected and two ex-officio Directors, a Treasurer, a Secretary, and a Forester. The President, Vice Presidents, and the Treasurer shall be elected annually; three Directors shall be elected annually for terms of five years each. The Secretary and the Forester shall be chosen by the Board of Directors to serve for whatever term they may designate. The President and Treasurer shall be ex-officio members of the Board of Directors. All officers shall serve until their successors are elected.

Section 2. The Directors designated as permanent or elected for stated terms by the members of the Association under the By-Laws adopted in February, 1921, are hereby reinstated for the terms for which such Directors were elected prior to the adoption of said By-Laws, that is:

The terms of Henry S. Drinker, Chester W. Lyman, and Charles F. Quincy shall expire at the annual meeting of 1923.

The terms of E. F. Baldwin, N. C. Brown, Standish Chard, J. H. Hammond, and Addison S. Pratt shall expire at the annual meeting of 1924.

The terms of all other Directors now serving shall expire at the annual meeting of 1922.

There shall be elected at the annual meeting of 1922 seven Directors who shall divide themselves into three classes by lot to serve for the following terms: three for five years, three for four years, and one for three years. There shall be elected at the annual meeting of 1923 three Directors who shall serve for five years. There shall be elected at the annual meeting of 1924 five Directors who shall divide themselves into two classes by lot to serve for the following terms: three for five years and two for one year. At the annual meeting of 1925 and at each annual meeting thereafter three Directors shall be elected for the full term of five years. If vacancies occur in the Board of Directors, Directors shall be elected at the next annual meeting to fill such vacancies, in each case for the unexpired term of the Director whose position has become vacant as shall have been determined by the original election of such Director or by lot as provided herein.

#### ARTICLE VII.—The President

The President shall be the chairman of the Board of Directors and shall preside at all meetings of the Association and of the Board of Directors. In his absence the members present at any meeting of the Association or of the Board of Directors, as the case may be, shall appoint one of their number to act as chairman of the meeting. The President shall be ex-officio a member of all committees.

#### ARTICLE VIII.—The Treasurer

The Treasurer shall have the custody of the funds of the Association, shall countersign all checks, shall perform such other duties in connection with the finances of the Association as the Board of Directors may order, and shall present to the Board of Directors at their first meeting each year a statement showing the receipts and disbursements of the Association for the preceding year and its assets and liabilities.

The Board of Directors may appoint an Assistant Treasurer to countersign checks, in the absence or disability of the Treasurer, or during any vacancy in that office, and to perform such other duties in connection with the finances of the Association as the Board may require.

#### ARTICLE IX.—The Secretary.

The Secretary shall be the managing officer of the Association, shall keep the minutes of all meetings of the Association and of the Board of Directors, shall have



the custody of the seal of the Association and of all documents, books and collections, shall sign all checks, shall conduct the correspondence of the Association not otherwise provided for, shall keep a list of the members of the Association with their addresses, shall notify members of the Association and of the Board of Directors of the time and place of all meetings, and shall perform such other duties as the Board of Directors may require.

#### ARTICLE X.—The Forester

The Association shall employ a Forester who shall be a man of recognized attainments and high standing in forestry matters. He shall be the expert of the Association in its technical work and a representative of the Association in its public forestry activities. Under the direction of the Board of Directors, he shall hold a responsible relationship toward the editorial policy of the magazine published by the Association as to forestry matters, shall promote the objects set forth in Article II of these By-Laws, shall advance such public forest policies as the Association may endorse, shall represent the Association in supporting national, state, municipal, and private for-

estry developments, and shall perform such other duties as the Board of Directors may require.

#### ARTICLE XI.—Meetings

Section 1. The annual meeting of the members of the Association for the election of officers and for the transaction of such other business as must be transacted by the entire Association shall be held in Washington, D. C., or at such other place, on such day in January and at such hour as the Board of Directors shall determine.

Section 2. Special meetings of the members of the Association may be called at any time by the Board of Directors.

Section 3. Notice of the Annual Meeting, and of any special meeting, shall be published in the magazine of the Association at least three weeks before the date fixed for the meeting.

Section 4. The presence of thirty members of the Association shall constitute a quorum.

#### ARTICLE XII.—Local Representatives and Affiliated Organizations

Section 1. The Board of Directors may designate such representatives of the Association in various portions of the United States and under such conditions as to

compensation or payment of traveling expenses as it shall deem wise and desirable in furtherance of the objects of the Association. The local representatives so designated shall perform their duties under the direction of the Secretary or Forester of the Association as the Board may determine.

Section 2. The Board of Directors may, by resolution, recognize and designate as organizations affiliated with the American Forestry Association such State Forestry Associations or other local organizations whose objects are in accord with those of the Association as shall request such recognition and designation, and as shall, in the judgment of the Board, in view of their character, membership, and purposes, make affiliation desirable in furtherance of the common objects of the Association and of the local organization.

#### ARTICLE XIII.—Amendments

These By-Laws may be amended at any annual meeting of the members of the Association by a two-thirds vote of the members voting by mail, provided that notice of the proposed amendment has been published in the magazine together with the notice of the meeting.

### HOW SKUNKS DEFEND THEMSELVES—Continued from Page 29

countries, their extraordinary means of offense and defense having rendered them famous.

Skunks are animals of moderate size, and in some instances would be considered small. In form they are stout, with very bushy tails. The colors of all are black, offset in the various species by white, the markings being in stripes, bands, spots or patches. Pelage of such a striking character as this renders the animals very conspicuous, and this is especially the case when they are seen upon the snow or upon very light colored soil. Skunks possess unwebbed toes, and these are of the ordinary number, their feet presenting nothing peculiar.

In their movements skunks are slow and deliberate, and they are not capable of attaining a very high rate of speed in running. They have teeth of the ordinary pattern of the smaller carnivora, there being about thirty-two or thirty-four.

The very long and rather coarse hair of a skunk leads one to suppose that the animal is stouter than it really is. They have somewhat long bodies, with small head, and short and rounded ears, and they become inordinately fat at good feeding seasons of the year; at such times they appear very stout and ungainly.

We have a very distinct species of skunk formerly known as the White-backed Skunk, which is found from

Texas to Arizona, from whence it ranges down through Mexico, Central America and into Patagonia. The writer has never seen this animal alive, and authors are at variance in their descriptions of its specific characters. One of the chief features in the external anatomy of this animal is its nearly straight, remarkably long and powerful claws. Its tail is quite unlike the tail in other skunks, being anything but bushy. The hair is very brittle, resembling the hair on our Prong-buck. It is said that in nature this animal is quite fearless, is very easily trapped, and will even make no endeavor to escape when simply approached and taken by hand. As it commands all the powers of offense and defense, however, possessed by its kin throughout this country, such an operation is fraught with no little annoyance, to say the least. If near its burrow, or some other convenient hollow in rock, log or tree, it will avail itself of the same and make good its escape.

This skunk has feeding habits very similar to those of other skunks, and it is likewise found both in the timber and upon the plains. Hunters say that its tail is usually held erect when walking, and, being very conspicuous in its color, it is an easy matter to discover the animal as it passes through low vegetation of any kind.

## AMERICAN FORESTRY GUIDES DEPARTMENT

SOLAN L. PARKES, EDITOR

THIS DEPARTMENT IS CONDUCTED ESPECIALLY TO INSTRUCT THE YOUTH OF AMERICA TO AID IN CONSERVING AND PRESERVING THE FORESTS, TREE, PLANT, BIRD AND HARMLESS ANIMAL LIFE.

WE have secured expressions of opinion from foresters, conservationists and other public-spirited citizens representing every state in the Union as to the best service which the American Forestry Guides can render to their country.

As a result of this we have arranged a pledge which is taken by each Guide. It is as follows:

**"Believing as an American Forestry Guide that every citizen should endeavor to see that our forests and other trees, wild plants, birds and other harmless wild life, should be protected and conserved for our common good, I do hereby pledge myself to do nothing willfully or carelessly to injure any forest or other trees, wild plants, birds or harmless animals, to do all in my power to protect and preserve the same, to prevent and extinguish forest fires, to obey the laws of the United States and the State wherein I may be, and to urge others to do likewise."**

A small manual is being prepared to tell the Guides how to do their duty without being hindered in school studies, and at the same time receive an abundance of exercise and pleasure. The fulfillment of this program will result in building up health and in acquiring simplified knowledge about trees, birds and animal life.

We are receiving many letters in reference to the Warden Guide and are happy to state that many of the boys and girls who are remotely located and hitherto have lacked opportunity to become a member of a National Organization are willing to help the forests.

It is gratifying to know that educators, scientists, naturalists and the heads of State Departments have opened their vast treasure houses of knowledge for us to help the boys and girls of the American Forestry Guides, to get a better understanding of the great out-doors, and the benefits that we derive by the wise use of the things we will find there.

A committee of writers of boys and girls' books composed of men and women who know what boys and girls should read, will carefully review the books which we are recommending to our members. In this same manner every committee is being carefully organized and we can assure our membership and the American people that the greatest care is being exercised to make available only that which will bring about a better, more beautiful and resourceful United States through the education of the youth.

We want the boys and girls living in the rural districts of the country to join the growing family of the American Forestry Guides. School teachers may find it a very good plan to organize posts of Forestry Guides in their schools. It will help them in their nature study work.

Boy and girl groups in villages, towns and cities should organize themselves into the American Forestry Guide Posts, and help in the prevention of forest fires. Never let a forest fire burn, if you can possibly prevent it. The American Forestry Guides have been helpful to the State of Pennsylvania in getting two of the largest railways in the state to place forest fire prevention cards in all their stations. One company even had posters placed in all of their coaches in the state.

The Guides have also started a tree-planting campaign to help the State Forestry Department in planting its four million seedling trees on waste lands, which are producing nothing.

The Guides also helped to build a big Forestry exhibit for a big educational event in Pennsylvania. They assisted a number of Manual Training departments in High Schools throughout the country in preparing tree exhibits.

We want to back up our President, who desires to see an elementary Forest Course taught in the public schools of the various states. Let us make this one of our objectives and follow the example set by the State of Tennessee, where a compulsory Forestry course has been introduced into the public schools.

Address communications to The American Forestry Guides, 1214 Sixteenth Street, N. W., Washington, D. C., or 431 Elm Street, Reading, Pennsylvania.

\* \* \* \* \*

We want the American Forestry Guides to build bird houses, and erect them, in order that when our feathered friends visit us next spring they will find a house ready for them to move into. Guides will be surprised what a difference it will make in their home surroundings if they have a family or two of native birds making their home there too. It has often happened, however, that houses are built, and erected, but not used by the birds. This is because the nesting box is not of the right size, the diameter of the entrance is too large or too small, or placed too high or too low. The following table, prepared by Ned Dearborn, Assistant Biologist of the United States Biological Survey, on the proper dimensions for various species of birds, will be found helpful in the building of bird houses:

Species	Floor of Cavity	Depth of Cavity	Entrance above Floor	Diameter of Entrance	Height above Ground
	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Inches</i>	<i>Feet</i>
Bluebird	5 by 5	8	6	1½	5 to 10
Robin	6 by 8	8	(*)	(*)	6 to 15
Chicadee	4 by 4	8 to 10	8	1½	6 to 15
Tufted titmouse	4 by 4	8 to 10	8	1¼	6 to 15
White-breasted nuthatch	4 by 4	8 to 10	8	1¼	12 to 20
House wren	4 by 4	6 to 8	1 to 6	¾	6 to 10
Bewick wren	4 by 4	6 to 8	1 to 6	1	6 to 10
Carolina wren	4 by 4	6 to 8	1 to 6	1¼	6 to 10
Dipper	6 by 6	6	1	3	1 to 3
Violet-Green swallow	5 by 5	6	1 to 6	1½	10 to 15
Tree swallow	5 by 5	6	1 to 6	1½	10 to 15
Barn swallow	6 by 6	6	(*)	(*)	8 to 12
Martin	6 by 6	6	1	2½	15 to 20
Song sparrow	6 by 6	6	(†)	(†)	1 to 3
House finch	6 by 6	6	4	2	8 to 12
Phoebe	6 by 6	6	(*)	(*)	8 to 12
Crested flycatcher	6 by 6	8 to 10	8	2	8 to 20
Flicker	7 by 7	16 to 18	16	2½	6 to 20
Red-headed woodpecker	6 by 6	12 to 15	12	2	12 to 20
Golden-fronted woodpecker	6 by 6	12 to 15	12	2	12 to 20
Hairy woodpecker	6 by 6	12 to 15	12	1½	12 to 20
Downy woodpecker	4 by 4	8 to 10	8	1¼	6 to 20
Screech owl	8 by 8	12 to 15	12	3	10 to 30
Sparrow hawk	8 by 8	12 to 15	12	3	10 to 30
Saw-whet owl	6 by 6	10 to 12	10	2½	12 to 20
Barn owl	10 by 18	15 to 18	4	6	12 to 18
Wood duck	10 by 18	10 to 15	3	6	4 to 20

\*One or more sides open.

†All sides open.

## QUESTION BOX

R. C. E., III.—We will see to it that the pamphlet asked for will be mailed to you.

C. A. B., Penna.—The information you asked for you will find in the bird house building schedule.

V. B., Col.—We will send the information desired.

A. W. B., Penna.—We will try to get the map for you, of the National Forests, asked for.

A. H. B., N. J.—Will try to find out the name of the publisher of the book you desire.

T. M. B., Jr. Md.—As soon as we receive, from the printer, the material you ask for, we will forward it to you.

A. T. C., Penna.—After going more fully into your letter we will endeavor to help you on your problems.

G. C., Tenn.—What you ask for is now in the printers hands. We will mail same shortly.

D. C., III.—You will find your answer in the Dearborn bird house survey.

I. H. C., N. Y. C.—Certainly you can enroll as a Warden Guide, we need you.

F. R. B., Mass.—As soon as we get the matter from the printer, which you ask for we will mail same to you.

G. J. D., Penna.—Will forward the book. Yes, you can organize a post.

J. W. G. D., Minn.—We will get the information for you.

L. F. D., Ken.—You are right. The forest fires must stop burning. We will send the information desired.

H. H. F., Mich.—As soon as we get the material from the printer we will mail you a complete outfit.

H. G. D., N. Y.—We are glad to see you interested in forest fire prevention the way you are. Will get you a copy of the pamphlet for you.

W. B. F., Penna.—Certainly an American Forestry Guide can go hunting, recognizing of course the laws of your State. Hunt like a true sportsman. Give the game a chance.

W. I. E., N. Y.—Eurely, it is every ones duty to keep our forests in good condition. You can not help your State better, than by preventing forest fires.

I. L. H., Wash. D. C.—We are glad to accept your services. Hope there are more like you.

W. W. L., Ohio.—Glad to have your letter. Thanks for the names.



# THE FORESTRY COMMITTEE AT BOGALUSA

By Austin Cary

THE picture shown was taken on November 16th last, at a place already well known in connection with its forestry development, and that promises in future times to be still more famous—Bogalusa in Louisiana, the town built around the manufacturing plants of the Great Southern Lumber Company.

For two days previous the Forest Policy Committee of the Chamber of Commerce of the United States had been holding hearings in New Orleans. Gravely and no doubt with the sense of responsibility weighing on them, they had listened to complaints, to statements of conditions, to men's ideas of what ought to be done; then came a day that must have been as welcome as it seemed well earned, of refreshment, of being entertained, of seeing actual achievements that gave substance to the ideas they had been considering.

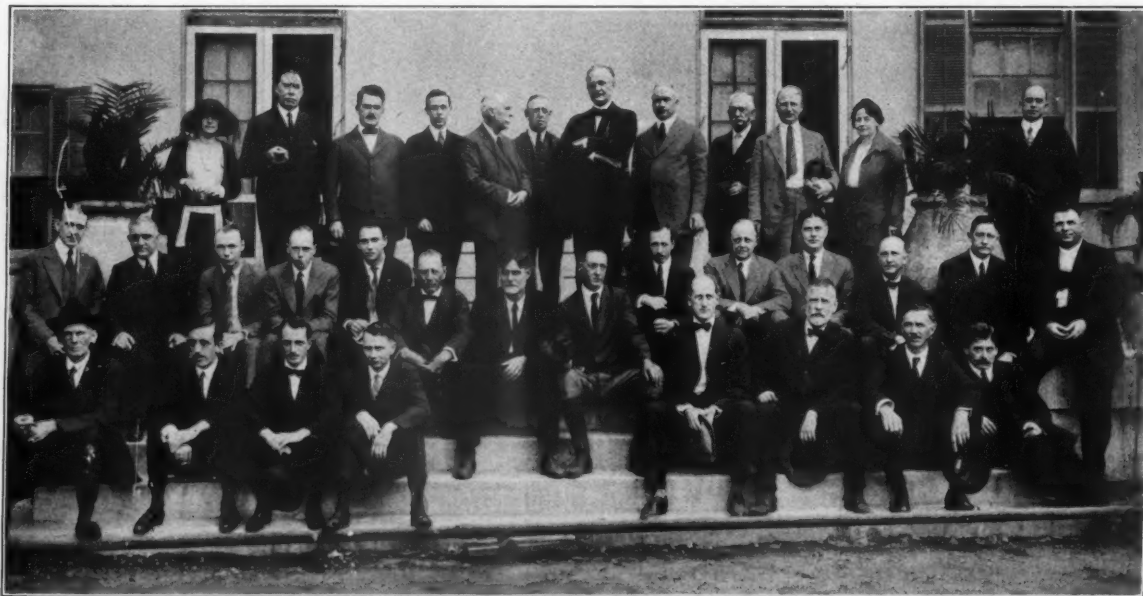
Hospitality is an idea not naturally connected with the lumber industry perhaps, but here it was generous, lavish even. Nor are large-scale plans reaching far into the future commonly attributed to it. Here, however, there was clear evidence of such foresight and visible achievement in that direction. The spectacle of men of many

kinds working harmoniously together in a common purpose was manifested too.

It was give and take in the matter of good will and entertainment for which Col. W. H. Sullivan of the Company, in charge of arrangements, could be trusted to provide channels. Arriving in the early evening, the Committee found itself face to face with a gathering of a hundred or more, the foremen of all the Company's operations, the officials and business men of the town. That at Bogalusa meant a banquet; at its close Mr. David L. Goodwillie, Dr. Hugh P. Baker, Dr. Henry S. Drinker and Harvey N. Shepard of the Committee had interesting things to say.

Then the next day as they walked about the busy town or were taken to different points in its neighborhood by automobile, the following things are what the gentlemen of the Committee were shown or realized. Of the two divisions into which they fall the human naturally comes first as both most interesting and important.

A management with broad outlook and possessed of large means settled on the idea of the permanence of their town on the industrial basis of paper manufacture.



Top Row—Mrs. M. M. Willmott; M. L. Alexander, Louisiana State Conservation Commission; Hugh P. Baker, Member of the Committee, New York City; O. M. Butler, Forest Products Laboratory, Madison, Wisconsin; Dr. Henry S. Drinker, Member of the Committee, Pennsylvania; C. F. Quincy, Member of the Committee, New York City; D. L. Goodwillie, Chairman of the Committee, Chicago; William H. Sullivan, Mayor of Bogalusa, President Southern Lumber Company, H. N. Shepard, Member of the Committee, Boston; W. DuB Brookings, Secretary of the Committee, Washington; Mrs. J. H. Cassidy; Roy L. Hogue, Manager Interior Lumber Company, Jackson, Mississippi;

Second Row—J. E. Rhodes, Secretary-Manager, Southern Pine Association; Walter Parker, General Manager, Association of Commerce, New Orleans, Louisiana; Mr. Frank Sullivan; Lenthall Wyman; H. J. Stahl; Mr. F. Salsman, President Salsman Lumber Company, Slidell, Louisiana; H. P. Mills, District Forester; J. K. Johnson, Forester, Great Southern Lumber Company; E. A. Hauss, President Alger-Sullivan Lumber Company, Century, Florida; G. A. Townsend; W. G. Flanders; A. T. Sherrell; J. H. Cassidy, Assistant General Manager, Great Southern Lumber Company;

Lower Row—James T. Ward, Secretary Mississippi Conservation Commission, Wayne County, Mississippi; V. H. Sonderegger, Louisiana State Forester; R. D. Forbes, Director Southern Forest Experiment Station, New Orleans; I. F. Eldredge, United States Forest Service, Washington; D. T. Cushing, Great Southern Lumber Company, Bogalusa; Austin Cary, United States Forest Service, Washington; James H. Jones, Land Agent, Century, Florida; L. Palmer, Lumber World Review, New Orleans, Louisiana.

Taking the lead in the execution of this plan as foster a native of the region, for many years connected with the Company's affairs, fulfilling a lifelong ambition to promote the growing of timber, and because he sees in it prosperity not only for his Company but his people, putting his whole mind and heart into the work. Adjustments of interests involved are easy in his hands. Enlightened and made friendly through employment, through personal contact, through the schools, even by dedication to their soldier dead of an area of newborn longleaf pine, the country people follow him as they would no other. And under him the Company's men playing their several parts, safeguarding against fire, designating the trees to be reserved for seed, and a whole logging crew of the usual stamp, men of all sorts and of different colors, but each to whom a share falls doing his work or manipulating his machinery in a fashion to best carry out the far-reaching plans of the Company.

And as to the woods themselves these things:—

A stock of virgin timber sufficient to last the great plants until new grown wood can be supplied.

Young growth half way along in its development, not general over the county indeed, but in some abundance, nevertheless, and showing clearly what the soil will do.

Closed to town 800 acres fenced, protected from fire, showing now the plants grown from seed of three species of pines that were sown nearly a year ago, to be the show place and site of trial and experiment.

Lastly 5,000 acres on which fell and germinated the long-leaf mast of 1920, fenced and protected too, green now with a shade that is characteristic.

To men whose minds were turned that way, and so open to receive impressions, those had here must have been truly inspiring. And the thought that this enterprise is alone of its kind in the South or the country would not have been allowed too much weight; such men as the commission know that the times are changing in favor of those with broad vision, who throw off the shackles of past habits and ideas and look strongly into the future. And the spirit of the thing, too, is of a kind that is self propagating.

Our country and its prosperity are bound up in its forests! It is a big idea, worthy of an effort and allegiance. But let us be sane and cheerful as we go about

its propagation, seeing the good where we may, giving credit where it is due, believing in a fortunate outcome in spite of difficulties and setbacks.

About forty leading lumbermen, timber owners, State and Federal forestry and conservation officials and others interested in perpetuating the forests of the South, put in a busy two-day session at New Orleans. Fire protection and tax relief were the dominant questions discussed. The advanced laws of Louisiana and the nationally known experiments of Henry E. Hardtner at Urania, Louisiana, and of the Great Southern Lumber Company at Bogalusa were also topics fully covered.

On the return from Bogalusa, the party stopped off at Slidell and inspected the excellent reproductions of the Salsman Lumber Company. On return to New Orleans, the Committee left for their homes.

A party consisting of J. E. Rhodes, Secretary, and Manager, Southern Pine Association, W. DuB. Brookings, Secretary of the Committee, J. W. Watzek, Jr., of the Crossett Lumber Company, and A. G. T. Moore of the Southern Pine Association made a special visit to the properties of Hon. H. E. Hardtner, where they spent a day in inspecting the results of this pioneer project in reproducing Southern Pine.

Members of the National Forestry Policy Committee who attended the meeting were: D. L. Goodwillie, Chairman, Vice-President Goodwillie Brothers Box Manufacturers, Chicago; Dr. Hugh P. Baker, Vice-Chairman, Secretary-Manager American Pulp and Paper Association; F. C. Knapp, President Peninsula Lumber Company, Portland, Oregon; H. N. Shepard, President Massachusetts Forest Commission, Boston, Massachusetts; Dr. H. S. Drinker, Director of the American Forestry Association and President Emeritus of Lehigh University, Philadelphia; C. F. Quincy, Director of the American Forestry Association and President Q. & C. Company, New York; W. DuB. Brookings, Manager Natural Resources Department of United States Chamber of Commerce, Secretary of the Committee.

The Committee in its investigation of forestry conditions has traveled 9,999 miles and passed through thirty-four states.

The Committee will shortly submit a report to the Chamber of Commerce on its nation-wide study of the whole forestry question.

## Importing Wood For Newsprint

**T**WO-THIRDS of the newsprint used in the United States in 1920 was made from wood grown on foreign soil. Out of more than 4,500,000 tons of wood pulp consumed for all purposes 35 per cent came from foreign markets. Over \$191,000,000 was paid for the pulp wood, wood pulp and paper imported. To this extent the United States has become dependent upon markets outside its control. This country can no longer draw its supply from our rapidly disappearing eastern forests. As a result primarily of forest depletion the cost of pulp wood rose more than 110 per cent in the five-year period 1916-

1920, and of wood pulp 35 per cent since 1918. These and other facts are presented in a bulletin "Pulp Wood Consumption and Wood Pulp Production, 1920," prepared by the Forest Service in cooperation with the American Pulp and Paper Association of New York. Prior to 1909 practically all the paper consumed in this country was manufactured here. This is no longer true. The paper-making industry in the United States has grown until its capitalization approaches the billion dollar mark. "The trouble in brief," says the bulletin, "is that we have mills without forests in the East and for-

ests without mills in the West." In New England and New York where the forests have been largely worked out, there is the heaviest concentration of mills. In Alaska, where there is enough spruce and hemlock to supply present American news-print requirements indefinitely, there is only one mill. The industry has remained stationary in the East while the lumber industry has moved West.

"In Minnesota, for instance, where domestic spruce forms 95 per cent of the consumption, pulp wood cost \$10.40 per ton less than in New York. If New York pulp mills could have bought their spruce from native forests at a saving of \$10 a cord the savings on their imports alone would have been \$5,000,000 during the year 1920."

Expensive Eastern mills can not be moved West nor can the great forests of Alaska and the Pacific slope be set down in New England and New York. Nor can the United States count upon reducing the amount of pulp wood necessary to meet present requirements. Further, Canada can not be depended upon indefinitely as a source

of supply, for Canadian forests are no more limitless than those of the United States. The remedy is two-fold: locate more mills on the Pacific slope and reforest the East.

"Reforestation will take not only skill, energy and money," say the foresters, "but most serious of all, many years must elapse before the East can be put on a thoroughly self-supporting basis. Yet there is no choice left to us. The work must be undertaken. We must have pulp and for every year of delay we must pay increasingly heavy penalties for neglecting to restore the forests as fast as the wood is consumed."

As the result of unregulated lumbering, it is pointed out, followed by fire, more than 60,000,000 acres of potential forest lands, most accessible to Eastern and Lake State mills, are now producing nothing or supporting a growth of little use except for firewood. If they were producing only a third of a cord of pulp wood an acre, every year, the total yield would be 20,000,000 cords or approximately twice the amount needed to supply the entire American consumption at the present time.

## A PROFITABLE CROP

**L**UMBERING was early a leading enterprise in New England, and up to 1840 white pine made up almost the entire softwood cut. By 1870 the original white pine was practically all removed, and by 1880 the second-growth pine forests were yielding an annual cut of 200 to 300 million board feet. With the extensive use of low grade pine for boxes and matches, this has increased to 600 million feet. The New England States produced more than one-fourth (28.7 per cent) of the total output of white pine lumber cut in the United States in 1918. Maine is today producing more white pine lumber than Idaho, the great white pine State of the northwest. Not so many years ago, Pennsylvania, Michigan, and Wisconsin were producing

enormous quantities of pine. In 1918 these three States combined, cut only approximately one-third as much white pine as was cut in the New England States. White pine has come back in the New England States and it will come back elsewhere. The second-growth stands of white

pine will do much to solve our timber supply problem.

Our idle lands must be restored to timber production, and no other tree is so valuable for this purpose as the white pine. Massachusetts is to be congratulated on establishing a new principle in State forest conservation. The recent law which provided for the planting of white pine on 100,000 acres of idle lands in this State, as rapidly as such lands can be acquired, means that such

lands will soon be returning revenue to the State far above their cost.

White pine not only adds the crowning touch to the average New England landscape, but it is also a crop that yields larger profits than any other crop that can be grown on a large proportion of the poorer soils of New England



Photograph by A. B. Brooks.

THE RESULT OF "NEGLECTING" A PASTURE FIELD

and New York. It is a crop that furnishes winter work on the farm, and supplies the material required in operating numerous factories. Its rapid growth on lands that would otherwise be waste has paid off mortgages, improved farms, and given the children college educations.



# THE LANDSCAPE VALUE OF TREES

By Frederick W. Kelsey

With the growing interest in forestry the landscape effect of the trees used for reforesting purposes should not be overlooked. As country homes increase in number the aesthetic features in both cultivated areas and woodlands become more and more important. Progress in this direction in the United States may be classified into three distinct periods.

First: The early clearing of the native woods growth with waste and destruction alike of the natural foliage effects and the irreparable loss of the timber supply, without consideration being given to future needs.

Second: The awakening to a realization of this suicidal policy as manifested in the conservation movement which has now become a subject of nation-wide importance.

Third: The prospective period when the beauty of the forest growth will in the treatment of forest land be recognized as an important factor of development in connection with the utilitarian purposes of the forest.

The fact is now everywhere appreciated that a treeless landscape is like a treeless city, an unattractive and depressing sight. That it is extremely detrimental from an economic viewpoint as well as from that of health and material progress is axiomatic, and forcibly demonstrated in the arid regions in China and other parts of the world, while we have already convincing examples of it in portions of this country where forest land is lying idle and unproductive.

Now, that the conservation and reforesting movement, local, state, and national, has assumed such comprehensive proportions, growing public interest will go steadily forward toward remedying as far as possible the errors of the past and providing for the future.

It is to the use of attractive trees where practicable in connection with reforesting developments, I would call attention. The necessity of suitable trees in variety of size, form, foliage, and flower for all landscape effects in private and public parks, country estates and other ornamental grounds as planned or planted, calls for no elaboration or discussion here. The conditions are obvious, and effective object lessons are matters of common observation.

In the broader field of forest planning, how many stop to consider what the future appearance of the planted area is to be? No one should be, or if well informed could be so visionary or impractical as to contend that beauty of the forest should be primal rather than a secondary or collateral consideration. Yet is there any valid or tangible reason why, in the selection of the kinds of trees for such planting, the varieties suitable for the soil and situation should not be chosen and the appearance of the forest plantations in future years considered?

The rugged pioneers, from the landing of the Pilgrim Fathers to the wood choppers and timber cutters from

New England to the Pacific Coast, could see no harm to future generations yet unborn following in the wake of their cuttings. The active hustling man of today, whether the get-money-quick type, the staid business or professional man of affairs, or the industrial worker, as a rule apparently loses sight of the important part art and beauty play in national life as a country attains age and as culture and wealth reach toward higher civilization.

In cities and urban communities this fact is becoming more and more recognized. Attractive buildings, art museums, fine parks, embellished parkways, municipally planted streets and other attractive features, indicate the trend of thought and effort to make both town and country beautiful.

Trees in the picture cannot be overlooked; and in some respects and in many places are the crowning features of the landscape attractions. The builders of the future a decade or more ago had the imagination to see in advance of their time what these plans and constructions would mean to the public, as we now see them and enjoy them.

There is no more beautiful and mysterious thing in nature than the unfolding and growth of the hardy trees. A combination of the deciduous and evergreen varieties produces from the unfolding of the new buds and flowers in spring until the incomparable tints and colors in autumn one constant succession of marvelous effects. Whether in lawn, park, or forest the contrast in form and beauty attracts the beholder and enchants the lover of nature.

In forest planting in some locations it may be, not infrequently is, necessary to use a single variety, resulting in a monotonous and sombre appearance. But in many locations where the general effect is noticeable from far or near, there would seem to be no difficulty in arranging the planting for the best attainable forest growth, and at the same time making the plantation, at least in some respects a thing of beauty as well.

Even where no deciduous trees are admissible, a selection of the evergreen varieties as commonly used for forest planting, such as the Scotch Pine, Red Pine and White Pine, the different spruces, Balsam and Douglas Fir, Hemlock, etc. interspersed with Larch, give a variety of coloring which adds a picturesque feature to the area as a whole without in the least detracting from the forest growth required.

For the encouragement of forest planting, the requisite trees are now grown in nurseries as well as in the state forestry department in very large quantities. They are produced at low cost and are sold at relatively low prices. Tree seeds are also becoming more and more an important business both for the use of nurserymen and state nurseries, also for private forestry projects.

## FOREST POLICY ASSURES GREATEST TIMBER GROWTH

ON the policy of sixteen years standing, National Forests of the United States at the present time are administered by the Department of Agriculture in such a way as to promote the greatest possible utilization for all purposes and at the same time the greatest possible growth of timber, the Secretary of Agriculture states in his annual report to the President. The administration of the forests under the policy developed by the department, the Secretary states, includes provisions for the following:

Protection from fire.

Regulation of cutting, tree planting and forest management to secure the maximum growth of timber.

Full utilization of forage resources for live-stock raising.

Classification of the forest lands and the elimination of areas most suitable for farming.

The use of the lands for a wide range of purposes, including industrial developments and recreation.

The fullest possible development of water powers.

The readjustment of boundaries to include forest lands and to exclude other lands.

In the administration of this policy, the Secretary states, the well-being of local communities, largely agricultural, is a primary consideration. The policy also contemplates, in the language of the Secretary:

"The extension of the National Forests through the purchase of lands which will protect the watersheds of navigable streams. The National Forests established by Executive order or by legislation now cover the headwaters of nearly all the important streams beyond the Mississippi and protect enormous investments in irrigation works, irrigable farms, and hydro-electric development. They are now slowly being extended by purchases over the watersheds of navigable streams in the eastern States and should be extended still further as rapidly as possible.

"This policy represents today the most striking application of public foresight to land problems in the history of the United States.

"Scientific research with a view to—

"Ascertaining and demonstrating through the activities of forest experiment stations the cheapest and most effective methods of growing the maximum timber crops of the best species.

"Products investigations centered mainly at the Forest Products Laboratory at Madison, Wisconsin, to ascertain and demonstrate means of preventing waste and the most effective means for the manufacture and utilization of our forest resources. These investigations are designed to extend the life of our present resources, reduce to a minimum the production necessary to meet future requirements, and indirectly to make the growing of timber more profitable.

"Investigations of timber resources, the extent of forest lands, and other economic questions, such as timber taxation, in order to secure data which must underlie the development and application of a National Forest policy.

"Dissemination of information and cooperation with States, timberland owners, and farmers in the protection and management of public and privately owned forests and farm woodlots. These activities include—

"Fire protection through cooperation between the Federal Government, the State governments and private owners.

"Cooperation with the management of privately owned timberlands to check their devastation and assure the continued use for timber growing of lands not better suited for other purposes.

"The dissemination of information which will make possible greater and better production on the 200,000,000 acres of farm woodlots owned by the individual farmers of the Nation. Woodlot products now rank in value as one of the first three or four principal farm crops of the country. The yield of these farm woodlots can be immensely increased by better methods.

"Publicly owned forests with the greatest additions which can be anticipated can not alone meet our requirements for wood. The department is therefore attempting by all means at its disposal to secure the adoption of a national policy for the production of timber on the privately owned lands most suitable for this purpose."

An administrative force remarkable for its efficiency has been built up and trained in this work, the Secretary says. He continues:

"Methods of cutting timber have been developed under which the forest reproduces naturally, and these requirements have been so harmonized with practical limitations of lumbering that the demand for National Forest timber has grown steadily. The condition of the National Forest ranges has been very greatly improved and at the same time the stock which they can support without damage has been increased by approximately one-third. A system of fire protection has been established which has and is serving as a model to State and private agencies alike. In general, all National Forest resources have been brought into use. Western public sentiment, at first decidedly hostile, now almost universally supports the present form of administration, and western stockmen have even gone so far in many instances as to demand the extension of the National Forest system of range management to the remaining public grazing lands; in short, the National Forests are now vindicated by their fruits.

"Some 2,000,000 acres of forest lands have been purchased at the headwaters of navigable streams in the East, and these have been placed under an administration

comparable with those of the western forests. Favorable progress in purchases was made during the past year.

"Forest products investigations, which at their initiation were ignored by the forest industries of the country, have through the demonstration of their benefits permeated the forest industries almost without exception and have given an entirely new conception of the possibilities in the conservation, manufacture and utilization of forest products. A beginning has been made in the establishment of forest experiment stations which should as rapidly as possible be extended to cover at least all of the principal forest regions of the country.

Notable contributions have been made to our knowledge of remaining timber supplies and related economic subjects.

"Information on the need for timber growing and the best methods for growing and utilizing timber have been widely disseminated. Public opinion has been aroused until now there is a powerful Nation-wide support for the adoption of a national policy which will bring about the growing of timber on privately owned lands to supplement that which can be produced on National Forests and other public holdings."

## FIRES ON THE NATIONAL FORESTS

By B. W. Greeley, United States Forester

THE area of National Forest lands burned over in the fiscal year 1920 was 342,193 acres, as against 2,007,034 in 1919; the estimated damage was \$419,897, as against \$4,919,769; and the total cost of fire-fighting (exclusive of the time of Forest officers) was close to \$1,000,000, as against \$3,039,615. District 1 (Montana and northern Idaho) had much the largest number of fires (1,716), and had 25 of the 99 fires which caused damage in excess of \$1,000. District 6 (Washington and Oregon) had 1,385 fires, and District 5 (California) 1,338. Together, these three districts had 73 per cent of all the fires—exactly the same percentage as in 1919.

The figures given reveal some instructive contrasts. While the total number of fires decreased 10.6 per cent, the number of lightning-caused fires increased 40.2 per cent. The decrease in man-caused fires was very marked, with a drop of 35 per cent. The number of campers' fires decreased 28.2 per cent, and this in spite of the fact that recreational use of the forests is growing by leaps and bounds.

Again, not quite nine-tenths as many fires were fought, at about one-third the cost; they covered one-sixth the area, and did one-twelfth the damage. The number of fires which burned less than one-fourth of an acre was considerably greater than in 1919, while less than one-third as many covered 10 acres and did over \$1,000 damage.

Any attempt at interpreting these data must take into account the great differences in the character of the two seasons. The general character and history of the 1920 season were summarized in last year's report. In contrast with the season of 1919, which both in length and severity was one of the worst that the West has ever known, it was short, but acute while it lasted. An unprecedented number of fires were caused by lightning, exceeding by 25 per cent the highest previous record.

Lightning fires are apt to be particularly hard to control, for two reasons: They occur most commonly in the high mountains, where they are hard to get at quickly, and they often occur in considerable numbers almost simultaneously, so that the protective force is taxed to the utmost to meet the strain without cracking. On one Forest in California—the Klamath—a series of storms

started 48 fires within six days, while on the Trinity a single disturbance in one day started 70, besides causing a number of others on neighboring forests. Under such conditions, to bring all the fires under control before they reach large dimensions is beyond human capacity with the present protective force and equipment. In district 6 (Oregon and Washington) practically all the fires requiring heavy expenditures to bring under control were lightning-caused.

The peak of the load occurred in district 1 (Montana and northern Idaho). Topography, climate and wilderness conditions combine to make the problem of fire prevention in portions of western Montana and northern Idaho well-nigh insuperable at the present time. In this district, almost always characterized by extreme summer drought, the precipitation for June, July and August was about two-thirds of normal. During the season there were 1,281 lightning fires—75 per cent of the total from all causes. And over 30 per cent of all the fires broke out within a single 10-day period.

A large outlay for fire fighting was inevitable under such conditions. Since the appropriation for fire fighting was only \$250,000, deficiency appropriations became necessary to replenish the general administration funds. Two such appropriations were made by Congress, totaling \$775,000. Fortunately, an exceptionally favorable spring and early summer, with late rains, resulted in expenditures in the latter part of the fiscal year far below what is normally required, so that at its close there remained an unexpended balance of \$50,000.

The 1921 season has continued, on the whole, favorable to the date of this report, and the expenditures for fire fighting have been decidedly below what must be looked for in years of normal hazard. Nevertheless, the fire-fighting fund for the fiscal year of \$250,000 has been exhausted and additional liabilities of approximately \$225,000 incurred. The greater part of the expenditures have been in Montana, Idaho and California.

A hazard of unique character was created by the tremendous blow down of timber on the west side of the Olympic Peninsula, in Washington. Something like 6,000,000,000 feet of timber are estimated to be on the ground, creating the most formidable fire trap the For-



est Service has ever had to reckon with. The bulk of the down timber is outside the Olympic National Forest, but if fire were once to get underway in this almost impenetrable mass of huge fallen trees its control would be practically impossible, and large losses would undoubtedly be suffered by the National Forest. To meet this situation the Forest Service, under authority of a special deficiency item, has cooperated with the State authorities and private owners in maintaining the most intensive protection ever attempted in the United States. This is mainly a matter of organizing the entire local public to eliminate all human causes of fire. It is something of a triumph to have come through the first and probably most dangerous season successfully.

During the past 11 years, 42,000 "man-caused" fires have started in the National Forests. These are more than two-thirds of all the fires with which the Forest Service has had to contend. In organizing for more and more efficient protection, it would be the height of folly to overlook the principal source of fire hazard, which lies in human ignorance or indifference.

The use of the National Forests for industrial and recreational purposes is rapidly increasing. Thousands of people now traverse or camp in the National Forests where there were but scores or hundreds six years ago. The annual number of man-caused fires is a barometer of the hazard occasioned by this enormous increase in the use of the Forests, a barometer which must be watched with the utmost care. If the number of man-caused fires increases proportionately with the use of the forests, the task of protecting them is well-nigh hopeless. From 1914 to 1917 there were from 4,300 to over 5,600 man-caused fires each year. Since 1917, while varying to a considerable degree, on account of climatic conditions, the movement has been downward. Last year approximately 3,000 fires were of human origin. While caution is necessary in drawing conclusions, it is probable that this result is due in part to the efforts of the Service in common with those of States and many private agencies to educate the public on the necessity for care with fire in the woods, to the increasing cooperation furnished by the press and by many commercial and semipublic agencies, and to a campaign of strict law enforcement against offenders.

There is no more important phase of fire protection than that of inculcating by every possible means the necessity for care in the use of fire on the part of every citizen and every industrial enterprise which uses or traverses the public forests. The forest fire evil, with its long train of costly destruction and emergency expenditure, can only be eradicated by public education. The proclamation of a "Forest Protection Week" by the President of the United States and by the governors of many States and the wide observance of this week, brought about through organized publicity and other educational efforts dealing with forest fires, were unquestionably of immense value.

Aside from attacking man-caused fires at the source, years of experience have only emphasized the truism that

effectiveness in protecting forests is measured by the speed with which fires can be discovered and reached. The efforts of the Forest Service are concentrated on rounding up all the big and little means of securing prompt discovery of incipient fires and quick action in reaching them. The main reliance for prompt discovery must be a lookout service, well distributed over peaks and other effective points and continuous during the daylight hours. The second essential is a network of telephone lines, inexpensively constructed by attachment to trees, so that the lookout can instantly communicate the alarm to the ranger, patrolman or guard who is nearest the telltale column of smoke. About 3,000 fires are thus put out on the National Forests every year before they reach a quarter of an acre in size. But fires may be fanned by heavy winds or may run in inflammable slashings or may be so inaccessible that they can not be reached quickly enough to be extinguished single handed, particularly if many fires are started simultaneously by a lightning storm or by a defective locomotive on an upgrade. Quick action must then be possible in mobilizing the available rangers and guards, in equipping them with fire-fighting tools and supplies of food, and in drawing upon local settlers, miners, stockmen and the crews of lumber camps for fire fighters. Such situations frequently occur and necessitate a warehouse and supply service whereby standardized equipment and foodstuffs can be furnished promptly in the quantities needed and an organization put quickly into action which extends from the base of supplies to the fire line, not unlike the organization needed for a military offensive.

Success in suppressing large fires in National Forests depends upon the completeness and perfection of this organization and its training in advance for dealing with every fire in every stage, with the utmost speed and without confusion or indecision. To bring its fire organization up to or near this ideal is the most important task of the Forest Service. It involves knowledge of technical appliances and methods and effective use of the crystallized experience gained in many years. Above all, it requires trained men who know the game. One of the outstanding needs of the Forest Service at the present juncture is to provide, even on a limited scale, for the systematic training of its field officers in the technique of fire control and suppression.

In recognition of the primary importance of an efficient fire organization, every possible effort has been made to increase the force of guards during the present fire season, at the cost of drastic cuts in other lines of work. With the appropriations made for the fiscal year 1922 it has been possible to add 68 men to the fire force in the four worst fire districts. The average forest ranger and guard in these districts, however, must still cover 52,000 acres. Experience has clearly demonstrated that this force is inadequate. Even during the average season, disregarding exceptional climatic hazards of frequent occurrence, it is not possible for the existing organization to reach and put out promptly a considerable number of fires which thereupon become large blazes and re-

quire heavy emergency expenditure. The loss in public property and in public funds from such emergencies, because the authorized force was too small to reach the fires in time, still continues. It will again be necessary to request Congress for a deficiency appropriation, because the fire-fighting resources provided in the regular budget were not adequate.

From the standpoint of appropriations, the outstanding need of the Forest Service in its business of protecting public property is to increase the summer guard force so that at least a larger proportion of the fires can be reached and extinguished when small and the necessity for emergency expenditures correspondingly reduced.

## FORESTRY AWAKENING IN WASHINGTON

By John D. Guthrie.

A CONFERENCE was held in Seattle on October 21, which may mean much to the future of the forests of the State of Washington. This was a forestry conference held under the auspices of the forestry committee of the newly organized State Development Bureau and convening in the Chamber of Commerce.

To Dean Hugo Winkenwerder of the School of Forestry of the University of Washington belongs most of the credit for inaugurating such a meeting of those most interested in the proper use and care of the immense forest wealth of the State. This conference is all the more significant because there was given wide publicity about a year ago, to a statement of a proposed forest policy for the State of Washington. Apparently the 1920 statement has not received the support of either the lumber interests or the officials of the State Forest School, or the business men of the State. The main characteristics of the 1920 statement might be said to have been a lack of a forward-looking view and an emphasis of self-sufficiency as far as the timber needs of the State, present and future, were concerned. The broad purpose of the October 21 meeting, as stated in the notice issued by the State Development Bureau, was to call together representatives of those most interested in forestry and the timber resources of the State and to agree upon the broad principles which should be considered in laying the foundation for a state forestry policy.

A comprehensive program was worked out in advance of the meeting. This program was made up of six main headings and the subjects under these were presented by representatives of the various agencies of the state most interested in formulating such a policy. Dean Winkenwerder presided at the meetings. The opening address, excellent in its breadth of view, was made by Col. Howard A. Hanson, chairman of the State Development Bureau. Dean Henry Landes of the College of Science of the University of Washington, presented a very comprehensive paper on "Land Classification in Washington", which was discussed as a problem fundamental to any forestry policy for the State. The subject of Forest Protection was covered by C. J. Joy, Secretary of the Washington Forest Fire Association, and then discussed by F. E. Pape, State Forester. "Needed Reforms in Forest Taxation" was presented by J. J. Donovan of Bellingham, followed by very full discussion by E. G. Ames, Prof. Frank J. Laube, of the Department of

Economics, University of Washington, and by F. B. Kellogg, U. S. Forest Service. The subject of forest taxation provoked very full discussion and this subject promises to be the most difficult one with which future conferences will have to deal. Prof. B. P. Kirkland, of the Forest School, University of Washington, followed with a very thoughtful and far-reaching paper on "Practicability of Forest Management on State and Private Lands." Discussion of this was taken up by Forest Supervisors W. G. Weigle and R. L. Fromme, Forest Service, with reference to the National Forests, and E. T. Allen, of the Western Forestry and Conservation Association, as to private forestry. A specially prepared paper by George S. Long on "A Suggested State Forest Policy" was read in Mr. Long's absence. This was discussed by E. S. Grammer and Dean Winkenwerder. It is understood that the addresses and papers will shortly be issued in printed form.

As previously announced this conference is planned to be followed by meetings of the committees and another formal conference a year hence, by which time it is hoped that the ideas and suggestions presented at the conference may have been crystalized into a definite forestry policy for the State. This proposed policy is then to be presented to the State Legislature at its convening in 1922, in concrete and definite form for legislative action. With approximately 15 per cent of the total remaining stand of the virgin timber of the United States and leading in the total annual lumber cut of the country since 1905 (except in 1914) and with a cut of 5,525,000 M. ft. B. M. for 1920, Washington may be truly said to have yet no forest policy, outside of an excellent forest fire law, that looks to the continuation of her high place in forest growth and lumber production.

This recent conference therefore has every indication of meaning much for the future. This prediction seems the more certain when one realizes the varied interests represented at this initial meeting. Representative lumbermen and loggers, men from the school of forestry, department of science and economics of the State University, the State Forester, the District Forester of the North Pacific District, the Secretary of the State Tax Commission, important members of the State Chamber of Commerce have thus come together in a sincere effort to work out a broad, comprehensive forest policy for this important State, a policy that will have for its object the continuous production of lumber and forest products for all time.

## AVENUE OF WORLD FRIENDSHIP GOOD

**M**EMORIAL Tree planting, that has carried the message of the trees into every city and town of the country, is another phase of the educational campaigns of the *American Forestry Association* that has met with hearty response on the part of the editors of the land. At this opening of a new year the association wants to extend all good wishes to the editors who have taken up this message of the trees and carried it on. Some of the editorial comment follows:—

*Washington Herald*: On the Lincoln Memorial grounds there is to be an international avenue of memorial trees. This is a mighty appealing conception and will be carried out under direction of Col. Sherrill, in charge of public grounds. At the head of the avenue will stand the two elms. Succeeding trees will be the gifts of other governments and probably native of their countries. All who visit the grounds may walk this avenue of world friendship, an arborescent league of nations.

It is quite appropriate that the elm was chosen as the American tree. It is as fully national as any of its habitats; it is long of life, is interwoven in more of American history than is any other tree and is distinctly a home tree. It is not militant. No one would speak of a sentinel elm. It is a tree of copious shade, of comfort and solace.

The planting ceremony was simple but impressive. The dedicatory address was made by Charles Lathrop Pack, president of the *American Forestry Association*, and Mrs. Harding assisted at the planting which was done by the American Legion. It was a feature of Armistice Week preceding the opening of the Washington conference and should be a good omen of releasing the grip of the sword to take the clasp of the hand.

*Chicago Post*: In the city of Washington two Armistice Elms are planted by the *American Forestry Association* on the grounds of the Lincoln Memorial, one elm for the Army and one elm for the Navy. It is understood that on Armistice day trees in memory of soldiers who fell fighting in the great war are to be planted in many cities, towns and villages of the country. Trees as memorials are more beautiful than anything in bronze or in stone, and, in addition they serve a useful purpose.

The rapid disappearance of the forests of the country is an old story. Every effort has been made to save the timber, which is necessary not only for building purposes but properly to distribute the rainfall. Until recently no real attempt to use our trees and to have them has been made. Now some of the lumber companies are replanting the

desolate tracts. A sense of the loss of the trees has come to the American people.

It would hurt nothing if every day of the year were the anniversary of some event in history which would promote tree planting. For every tree that is cut down in France another is planted. If something of the kind were done in this country posterity would benefit.

*Bethlehem, (Pa.), Globe*: This country will in years to come bless the *American Forestry Association* which immediately after the signing of the Armistice began a campaign for the planting of memorial trees. Organizations of all kinds welcomed the idea and especially in our own state the planting of these trees in many places where they were needed was taken up with enthusiasm. That memorializing those who helped the great war should take the form of planting trees is to be highly commended.

*Rocky Mountain News (Denver)*: The *American Forestry Association* must have faith in the pacific conference and the fruit that shall come forth from it, for it planted the shoots of two elm trees on the Lincoln Memorial grounds at Washington to commemorate the gathering.

If the conference succeeds, the trees will be there to bear testimony to generation following generation of the inception and the inauguration of the movement; if the conference fails, they will stand out as an irony upon the frailty of human kind and to mock the efforts of those who were called statesmen in their day to get a little above the processes of the caveman.

The elm tree is a symbol of fraternity. The human family has taken to it kindly. It is stately, yet inviting. The poets love it. Longfellow wrote of it:

"And the great elms o'erhead  
Dark shadows wove on the aerial looms,  
Shot thru with golden thread."

In Tennyson the elm tree is a favorite as it is of the English manor. The elm lives long. The trees planted to herald the possible dawn of world-peace will spread their branches with years-therein is their advantage over stone and metal, for memorials made of these begin to fade as soon as they are set in place, whereas the tree adds to its growth from year to year and becomes a benediction as it ages.

Something of good will come from the conference, we are sure, and the elms will not have cause to shrink or feel ashamed as the seasons go by.

*Montreal Herald*: Mere human art, no matter how great the genius of the artificer, cannot begin to compare with the art

of nature. There is something appealing in the latter which renders it far superior to anything of the kind in stone or metal or on canvas.

Cities and towns, nay, even villages, on this side of the Atlantic that have been bereaved of their sons in the world conflagration of the second decade of the Twentieth century cannot do better than to take a leaf out of a book of the gold diggers of Ballarat Australia and create memorial avenues, lined on either side, not by stone or bronze statues but by beautiful living maple or oak trees that will bear their names and that will develop and flourish with the growth of the country.

*Rochester Post-Express*.—An important meeting in the interests of municipal forests as a means of relieving the unemployment situation was held in Schenectady on Friday at which the principal speaker was Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp association. Dr. Baker, in his address, stated that America needs the municipal forest not only to produce a valuable crop but to avoid the economic waste of idle land and at the same time to provide employment for large numbers of men.

It seems hardly credible that we have in the United States to-day approximately eighty-one million acres of loafing land, an acreage so cut over and burned that artificial restocking is necessary. And yet this land, if properly put to work, would provide enormous quantities of timber for our wood using industries. At the present time, there is pending in Congress, legislation initiated by the American Paper and Pulp association in cooperation with the American Newspaper Publishers' association, the American Forestry Association and other national organizations which would insure the nation's future timber supply.

In the state of New York, municipally owned forests have already been instituted but the movement is still in embryo. Newburgh, Malone and other cities throughout the state are annually planting municipal forests through the efforts of the school children on Arbor day. In the older countries of Europe the municipal forest system has been in existence for hundreds of years with the result that in the lean years of business depression idle men are given employment in planting, thinning and marketing at a profit to each municipality, the crop produced on these forests. It is a splendid plan and should meet with favor generally throughout the United States.

*Asheville Citizen*.—Forest reservations of the country are coming into their proper recognition by Congress. Representative Woodruff of Michigan is the latest Con-



# OMEN, SAYS WASHINGTON HERALD

gressional advocate for vast extensions to the network of highways that are eventually to make these reserves accessible to the American people. Mr. Woodruff's plan calls for the expenditure of 10 millions a year in building roads and trails, an investment which means better fire protection to the tremendous forest assets, more practicable marketing facilities for timber and more health and pleasure for the thousands who will spend vacations in the wooded places.

The people have long been indifferent to the destruction of the forests, and this apathy is not yet a thing of the past; but there is a growing appreciation of the material and cultural value of them that promises well for forest protection and recreational use of forests.

*Berkeley, California, Gazette:*—The American Forestry Association reports that the planting of memorial trees is going to break all records. The first big planting has been at South Bend, Ind., where the women of the county set out trees for all their soldier dead along the Lincoln Highway. It is a noble cause. In fact, it is two noble causes in one. Every soldier who laid down his life for his country deserves some such living memorial, which literally keeps his memory green. And every tree is more than a monument, benefitting the living while it honors the dead.

*Norwalk, Connecticut, Evening Hour.* Large numbers of trees have been planted in the past few years as memorials to the soldiers who gave up their lives in the World War. The idea is an excellent one and from the statement of the American Forestry Association to the effect that a large number were to be set out along the Lincoln Memorial Highway with the same object in mind it can be appreciated that the plan has made a favorable impression and that it is by no means too late to put it into effect.

*Troy, New York Times:* Charles Lathrop Pack, President of the American Forestry Association, who has long been identified with forestry, good roads and the conservation of national resources, makes an interesting statement with reference to the development of a campaign for memorial tree-planting. This, he says, has spread until it includes "roads of remembrance" and memorial parks in hundreds of places.

The memorial highway and memorial tree idea deserves hearty support and earnest cooperation by all who appreciate the significance of the movement. Great routes of travel, like the Lincoln Highway, the

would add to their beauty and attractiveness and serve as tributes to those who deserve such recognition. There would be peculiar appropriateness, for instance, in placing trees along the Roosevelt Highway and so expressing something of the spirit of a great American who was pre-eminently a lover of nature and of outdoor life. A highway lined with fine trees provides peculiar pleasure to every traveler, and memorial trees furnish reminders of eminent American men and women and thus become invaluable object lessons. Build more memorial highways and continue the planting of memorial trees.

*Butler, (Pa.) Citizen:*

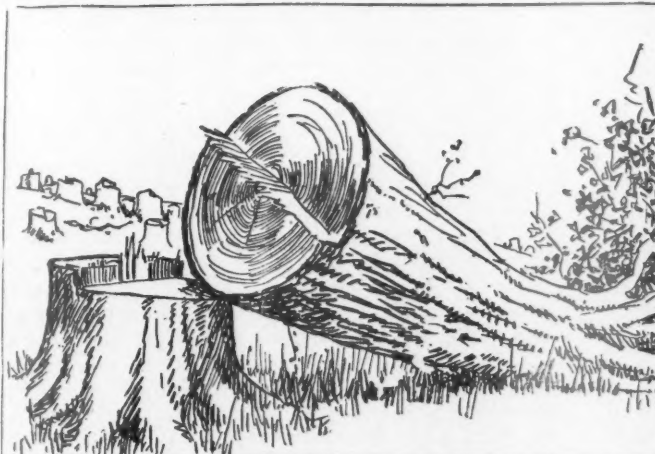
A new scheme for memorials which should appeal to everyone is gaining in favor all over the country and threatens at some time in the near future to become a nearly national movement. It is the "Roads of Remembrance" idea which was originated by the American Forestry Association. As the automobile becomes more and more the method of business and pleasure travel, so will the demand for these beautiful roads mount higher and higher. Good roads are not the only demand of the present day; beautiful roads are also desired. Fine trees lining a highway increase the pleasure of an automobile trip and lessen the arduousness of a business trip.

*DeKalb, (Ill.) Chronicle:* Not only as a fitting memorial to those who died in the recent war, but also to beautify our highways, nothing could be done at a smaller cost to our country, than the planting of trees along the country roads. Nothing adds so much to the beauty of a road or so favorably impresses a visitor.

*New Haven Register:* One of the wisest things Governor Lake has done

in his public service is to recommend the adoption by the state of the plan of tree memorials for the soldier dead in place of the proposal of stone markers on the highways.

**SINCE WE ARE CUTTING DOWN OUR TIMBER EACH YEAR SIX TIMES AS FAST AS IT CAN GROW—AND IT TAKES 300 YEARS TO GROW A GOOD SAW LOG —**



**ISN'T IT ABOUT TIME FOR US TO PLANT THE TREES FOR OUR GREAT, GREAT, ETC., GRANDSON'S BUNGALOW?—Darling, in the Washington Hera'd.**

Roosevelt Highway, the National Highway, the Dixie Highway, the Jefferson Highway and various other roads and trails are already realities, and memorial tree planting

# CANADIAN DEPARTMENT

By ELLWOOD WILSON

In the discussion of forestry problems there has always been a lack of basic information as to the rate of tree growth yields per acre, and the best silvicultural methods to employ in handling woodlands. Foresters are much handicapped by not knowing what will happen in certain mixtures when some of the species are removed and it will require years of experiment to get at the facts. Great strides in the establishment of research stations are being made and the information already obtained is of great practical value. In Canada there are now research stations, with permanent sample plots, at Chalk River, Ontario, conducted by the Dominion Forestry Branch, at Bathurst, N. B., operated jointly by the Dominion Forestry Branch and the Bathurst Lumber Company, at Lake Edward, Quebec, by the Dominion Forestry Branch and the Laurentide Company, and at Iroquois Falls, Ont., by the Dominion Forestry Branch and the Abitibi Pulp and Paper Company. Next year the Dominion Forestry Branch will establish other stations in the West and the Quebec Forest Service will cooperate with the Dominion Branch and the Laurentide Company in establishing plots for the study of different systems of cutting in the Lake Edward District. A party of foresters has just visited the Chalk River Station on the Petawawa Military Reserve and found the work most interesting and very well planned and carried out. Plots have been established where poplar and birch which had come up on old burns is being cut out, for use in a match factory, the timber being cut by the buyer under the supervision of the station. Plots where different methods of selection cutting are employed where different amounts of thinning have been made, and probably, most interesting of all, where experiments are made to determine the conditions for influencing natural seeding. Plots have been selected where, under different degrees of shade, the mineral soil has been exposed to see if seed will take hold. The results of these experiments are positive and show that where the mineral soil is exposed germination is much facilitated. One of the most interesting things was the study which has been made of the growth of white spruce. In one stand, on thin soil on a rocky ridge, a tree was cut, measuring 23 inches on the stump and only 32 years of age. From data collected in many localities it seems that white spruce will be far and away the best tree to plant for pulpwood and it is probable that it will in a short period grow faster and yield more wood than even jack pine. This species, with its immunity to most diseases and its rapid growth on all sorts of sites will make an ideal tree for planting. There is a most comfortable house for the staff

at Chalk River in an ideal location for the work and much valuable information will be collected as time goes on.

A visit to the Harvard Forest School forest at Petersham, Massachusetts was also most interesting. Mr. R. T. Fisher has done much interesting and valuable work in forest investigation, especially along the lines of selective cutting together with some planting and a good deal of natural regeneration. All this work has been done on a commercial basis and has not only paid its way but has also resulted in a marked increase in the value of the property brought about by the removal of the less valuable species and the encouragement of the more valuable ones. The results of this work will soon be published and will be of great interest to all foresters and especially to those who are in charge of commercial forests.

Apropos of white spruce, a plantation of this species at Oakdale, Massachusetts on the Boston Reservoir area, in charge of Mr. Allardyce, covering about 27 acres shows a height growth of about thirty feet and a breast height diameter of about four inches. The trees are very uniform in height, very healthy, and well worth a visit from any one interested in growing spruce.

The Forest School of Toronto University under the direction of Dean Howe, shows the largest registration on record, 22 first year men, 13 second year, 10 third year, 12 in the graduating class and four special students.

A meeting of the Quebec Society of Forest Engineers was held in Quebec City on the 19th of December to which all the Provincial Foresters were invited.

A meeting of the Canadian Society of Forest Engineers was held in Toronto on the 27th of December, in connection with the meeting of the American Association for the Advancement of Science and that of the Society of American Foresters.

The aerial survey made by Dr. Swaine of the budworm damage to balsam fir in Ontario was most successful. The area affected was determined and also to a considerable extent the degree of infestation. In a few days flying information of very great value was obtained which could not have been acquired even through months of survey work on the ground. A very large area of balsam is affected and probably 99 per cent of the trees will be dead in three or four years. As the balsam is probably about 70 to 75 percent of the total coniferous stand the loss will be very serious. On this trip one of the planes was unable to get off a lake owing to hills close to the lake and had to be landed rather suddenly on the water, slightly injuring Mr. Arthur Graham, manager of the Ottawa Forest Protective

Association. The slat at the back of his seat struck his back rendering him helpless for two weeks and he had to be carried out of the woods, more than fifty miles on a mattress. He is now almost recovered. The plane was repaired and brought out.

The problem of the utilization of this dead balsam is a serious one. One large limit holder has enough of it to practically run his plant for ten years and long before that time it will have rotted and will be a total loss.

A questionnaire sent out by the Woodlands Section of the Canadian Pulp and Paper Association shows that of fourteen paper mills reporting four were doing experimental work on new or improved logging methods, three were experimenting with steam or gasoline tractors, two with power driven portable saws for use in the woods, two with mechanical loaders, all were willing to give the results of their experiments, and all were willing to discuss the project of assigning specific experiments to different companies the cost to be divided among all, or the project of establishing a central cooperative experiment station.

The Ontario Government has taken steps to set aside forest reserves in Pakenham and Darling Townships in Lanark County as municipal forests. The Town of Grand' Mere, Quebec, is also considering the purchase of a tract of land for a Municipal Forest.

The Dominion Forestry Branch has arranged to ship to the British Forestry Commission a much larger amount of tree seeds than heretofore. In the past the amount has been about 1,000 pounds per annum but this will be increased to a minimum of 3,000 pounds and it is hoped this will be further increased to almost double that quantity. The British Columbia species are giving splendid results in England which has a very similar climate. A plant for seed extraction is being built at New Westminster, British Columbia.

Very few people ever disturb the fire notices which are posted throughout the country printed in many languages including Indian syllabic writing. This summer in the West a ranger found one of these posters turned over and covered with Indian writing. As he could not read it he took it down and, fearing that it might be a message to the Indians to disregard the fire laws, showed it to several Indians asking them to read it. They only smiled and refused to interpret it. This made him more suspicious and he sent it to Ottawa. The Official Interpreter also smiled and wrote back telling him that it was a proposal of marriage from a "brave" who was too timid to propose in person.

## PLEASANT THINGS TAKEN FROM LETTERS TO THE EDITOR

"Your journal is an admirable production, written and illustrated in such a way as to compel people to read it. We have nothing quite like it in this country. May it continue to prosper, and help on the cause of afforestation."

M. B. HAVELOCK, England.

"I am indeed pleased to note the general rejuvenation of the cause of forest protection and development and think that AMERICAN FORESTRY has had a major part in arousing this sentiment."

THOMAS B. WYMAN.

"In my opinion, AMERICAN FORESTRY is one of the most interesting and valuable magazines published. The articles on plants, animals, and reptiles are especially interesting, and the work of conservation carried on by the Association, and promoted in its well edited magazine, deserves the support and cooperation of every thinking person in the country."

J. M. HEISER, JR.

"I find a great deal of interest in this magazine which is very helpful to me in my work. It is indeed a splendid publication."

AXEL O. OXHOLM,

Chief Lumber Division, Department of Commerce.

"Your work in the past has been so instructive that I look forward to every issue of the AMERICAN FORESTRY."

JOHN F. SHANKLIN.

"It's a wonderful book and I couldn't get along without it."

QUENTIN R. HALLS.

"I am well pleased with AMERICAN FORESTRY. It is a splendid journal."

HAROLD WOODLANDS,  
(Australia)

"The magazine, AMERICAN FORESTRY, is, I think, lovely in every way."

MRS. J. H. TALBERT.

"I wish you success in the work of perpetuating our forests."

VINCENT S. STEVENS.

"The Forestry Club at the University is a subscriber, as well as many of the individual members, and the magazine is a distinct help to us in several of our Forestry courses."

REUBEN W. SMITH, JR.

"I want to express my appreciation of the very interesting articles by Dr. R. W. Shufeldt which have been appearing in AMERICAN FORESTRY. I always read them with great interest and with keen enjoyment."

ELMER LEWIS KAYSER,  
Secretary, George Washington University.

"I shall never cease to desire membership in the Association."

GLENWOOD E. JONES.

"I have been an interested reader of the AMERICAN FORESTRY MAGAZINE for at least ten years, and along with my connection with the Trexler Lumber Company it has helped me wonderfully."

HOWARD F. ADAMS.

"American Forestry seems more interesting than ever!"

MARY D. HUSSEY.

"Wish every farmer would take your magazine. These dry days when forest fires are common everywhere I do my best to see that they are put out, and if only people would just read your magazine they would learn the value of our forests."

NICK B. BODDIE.

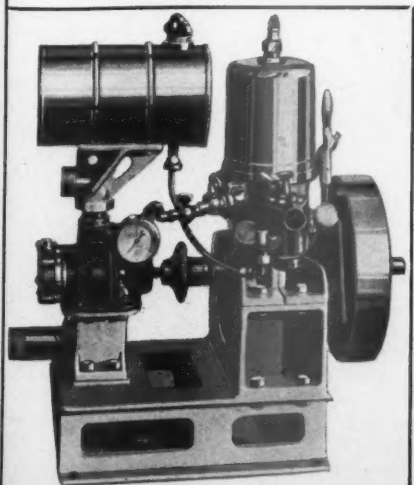
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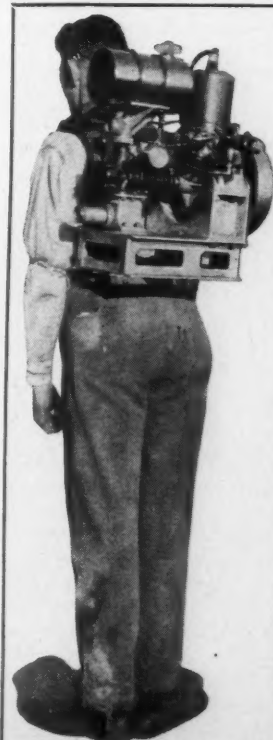
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#### PINE BEETLES FILMED

Saving western pine forests from its insect enemy, the western pine beetle, is shown in a new one-reel motion picture produced by the United States Department of Agriculture. The new film, entitled "Fighting Western Pine Beetles", is a graphic story of the work of the Bureau of Entomology of the department in controlling this pest, which annually causes great destruction among valuable timber. The fact that the insects concentrate in certain trees affords practically the sole important means of combating it. The beetle works under the bark, girdling the tree with a maze of passageways, which in time kills even the biggest timber. In one scene, for instance, is shown a forest giant 230 feet high and 84 inches in diameter, killed by a mass attack of the pests. The department maintains control camps in various sections where the pest is particularly bad. It is the work of the men of the camp to keep a sharp lookout for trees infested with the beetle. Tiny holes in the bark usually betray the presence of the marauder. There are two methods of destroying the pest—one for dry weather and one for other seasons. In either case the tree is felled. In the dry season, the limbs and bark are stripped off and all, including the log itself, exposed to the sun for several days. The bark, it seems, absorbs heat to 130 degrees, which is enough to kill the beetle in the larval stage. At

other seasons the stripped bark and limbs are piled along the trunk and burned. This kills the insect without damaging the log.

#### NEW YORK'S FOREST FIRES

The 1921 fire chart of the Conservation Commission shows the progress that the State has made in reducing the amount of forest fire losses through the development of its fire protective system.

The season just ended was the worst in many years, not only in this State, but in other eastern states and in Canada. There were more fires this year than in any previous season of the thirty years for which records are available, but the losses were trifling in comparison with other years, as the result of the promptness and efficiency with which they were controlled.

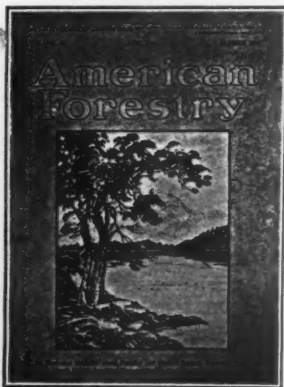
With a total of 720 fires, the total loss amounted to \$49,920, as compared with \$850,000 from 645 fires in 1903, and \$800,000 loss from 600 fires in 1908, before the present system of fire protection was established.

During the time when forest fires were burning last spring and through a large part of the summer, there were days and days of high winds which made it almost impossible to bring them under control.

## BECOME A MEMBER

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### WHITE PINE BLISTER RUST FOUND IN PENNSYLVANIA

For the first time since the white pine blister rust was discovered in America, infections on currant and gooseberry bushes were found this fall in Pennsylvania. The original discovery was made by a United States Department of Agriculture blister rust investigator in Wayne County. The significance of this discovery lies in the fact that white pine blister rust is spread from pine to pine only through the medium of currant or gooseberry bushes. While some blister rust has been found on planted pines in Pennsylvania, they were brought in from Europe in a diseased condition. These infected trees were destroyed before currant and gooseberry leaves became diseased, thus eliminating the danger of the blister rust attacking healthy pines.

Extensive work has been done in New England and northern New York the past summer to organize movements for eradication of the death-dealing bushes within 300 yards of white-pine trees and stands. Such work protects the trees from the disease for a period of years, but both wild and cultivated currant and gooseberry bushes must be destroyed within the 300-yard zone. Owners of fine stands of white pine often have been reluctant to believe danger exists through the proximity of the bushes, but once demonstration has been made, they become active in rooting out the offending shrubs. Infestations as high as 46 per cent of the pines have been found on some properties in New England and New York. White pine is well recognized as one of the most profitable crops that can be grown on the poorer soils of the North-eastern States.

### DAMAGE BY THE SATIN MOTH

The advisability of quarantining the States of New Hampshire and Massachusetts to check the spread of the satin moth, a dangerous insect pest newly discovered in this country is being considered. Quarantine action, if decided upon, would prohibit or restrict the movement of the insect's principal carriers, poplar, willow, and related plants, from these States, or from any districts in them found to be infested with the pest, into other States and Territories. The satin moth, so called from its white, satin-like appearance, occurs throughout Europe, and is particularly an enemy of poplar and willow. It was first reported in this country about July 1, 1920, in the Fellsway district north of Boston, but from its distribution and abundance, as later determined, it is thought that it then had undoubtedly been in the United States for several years. It has not been possible to determine the source of its introduction, but the department thinks it probable that the insect was brought in with some importations of willows or poplars.

### FISH INVESTIGATIONS SHOW SOME OLDER LAKES CONTAIN LESS FISH.

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## SCHOOL IN YELLOWSTONE PARK

On Monday, October 10, the first public school for children in Yellowstone National Park was opened at headquarters with 14 children of Government employees in attendance. One of the rooms of the former Post Exchange Building of old Fort Yellowstone was remodeled by the Government and set aside for school purposes but this was as far as the park officials could cooperate towards providing school accommodations. The parents of the children are sharing the cost of the service of the teacher.

# BOOKS ON FORESTRY

AMERICAN FORESTRY will publish each month, for the benefit of those who wish books on forestry, a list of titles, authors and prices of such books. These may be ordered through the American Forestry Association, Washington, D. C. Prices are by mail or express prepaid.

FOREST VALUATION—Filbert Roth.....	\$1.50
FOREST REGULATION—Filbert Roth.....	2.00
PRACTICAL TREE REPAIR—By Elbert Peets.....	2.25
LUMBER MANUFACTURING ACCOUNTS—By Arthur F. Jones.....	2.10
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THE TRAINING OF A FORESTER—Gifford Pinchot.....	6.00
LUMBER AND ITS USES—R. S. Kellogg.....	1.25
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\* This, of course, is not a complete list, but we shall be glad to add to it any books on forestry or related subjects upon request.—EDITOR.

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# DISSTON

## NEWS FOR LUMBERMEN



Published Occasionally HENRY DISSTON & SONS, Inc., PHILADELPHIA, U. S. A. January, 1922

### Why YOU Should Use Disston Saws

A Few of the Reasons for Disston's 80 Years' of Leadership.

**D**ISSTON Saws are manufactured completely in the Disston factory.

**D**ISSTON workers are, for the most part, expert craftsmen. A great many of them have grown up—in many cases have followed their fathers—in the Disston factory and are truly experts in saw-making. Eighty men in the Disston factory have worked here more than 40 years!

**T**HE steel used is made in the Disston Works—within the factory wall—because to insure constant good quality, it is necessary to control absolutely the quality of all steel used.

**Y**OU have undoubtedly heard of Disston-made Saw Steel. It is known for its good quality wherever saws are used. This is because it is made from a Disston formula which many years of experimenting have shown gives the best saw steel.

**D**ISSTON Saws are uniformly and properly hardened and tempered. The processes by which this is done were developed by Disston and are used exclusively by Disston.

**D**ISSTON Saws are ground by a special method which gives a thickness and taper to the saws that is exceptionally accurate and uniform.

**T**HESE are some of the reasons why every Disston Saw is a good saw. They are also reasons why so many users have found that it pays to specify "Disston."



**The Largest Circular Saws**  
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It contains stories of successful lumbermen in all parts of the country. It carries write-ups of interesting operations. It often has an article on some special phase of saw sharpening or repairing. There is a page of jokes which is the equal of any.

We will send you this magazine—free of charge—if you would care for it. All you have to do is ask for it. Drop us a post card with your name and address on it and say, "Please put my name on the Crucible Mailing List." Do it today—you'll like it.

### Things Not to Do in Operating a Saw

**T**HE following is a list of "don'ts" for the saw operator that are taken from the "Disston Lumberman's Hand Book." Many readers have told us that a list of this kind was a time-saver for them and we print it here in the hope that it will be of value.

#### DON'T USE—

- Insufficient power to maintain regular speed.
- Too thin a saw for the class of work required.
- Too few or too many teeth for the amount of feed carried.
- Weak or imperfect collars.
- Collars not large enough in diameter.
- Ill-fitting mandrel and pin holes.
- Uneven setting and filing.
- Points of Teeth filed with a "leal"—not square across.
- Too little set for proper clearance.
- Too much pitch or hook of teeth.
- Irregular and shallow gullets.
- A saw out of round and consequently out of balance.
- A sprung mandrel, or allow lost motion in mandrel boxes.
- A carriage track neither level nor straight.
- A carriage not properly aligned with saw.
- A journal which heats.
- Guide-pins too tight or not properly adjusted.
- Teeth which have backs too high for clearance.
- Any saw too long without sharpening.

### SPEED!

"Near Stevens Point, Wisconsin, on September 19th, 1920, two men using a Disston High-Grade Cross-Cut Saw cut through a Grey Elm log, 18½ inches in diameter in 15 seconds."

**W**E do not hold up this example of fast cutting as a record. It is just one instance that we know of and may not be a record accomplishment. But it does illustrate what our statement that the combination of the famous Disston-made Steel, Disston manufacturing methods, the latest improvements in cross-cut saw design, and Disston workmanship (developed through 81 years of experience) means to users of cross-cut saws.

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Back Saws  
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Buck Saws  
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Gauges—Carpenters'  
Marking, etc.

Hack Saw Blades  
Hack Saw Frames  
Hand, Panel, and Rip Saws  
Hedge Shears

Ice Saws  
Inserted Tooth  
Circular Saws  
Keyhole Saws  
Kitchen Saws  
Knives—Cane, Corn, Hedge  
Knives—Circular for Cork,  
Cloth, Leather, Paper, etc.

Knives—Machine  
Levels—Carpenters' and Masons'  
Machetes  
Mandrels  
Milling Saws for Metal  
Mitre-box Saws  
Mitre Rods

One-man Cross-cut Saws  
Plumbs and Levels  
Plumbers' Saws  
Pruning Saws  
Re-saws  
Saw Clamps and Filing Guides

Saw Gummers  
Saw-sets  
Saw Screws  
Screw Drivers

Screw-slotting Saws  
Segment Saws  
Shingle Saws  
Slate Saws—Circular  
Squares—Try and Mitre

Stave Saws  
Sugar Beet Knives  
Swages  
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## BOOK REVIEWS

**DOWN THE COLUMBIA.** By Lewis Freeman (Dodd, Mead & Company).

A graphic account, by an author to whom adventure is no new story, of a trip from source to mouth of the Columbia. Though one of the world's largest and best-known scenic rivers, this is the first record that has been made of any trip from its glacial sources to tidewater, and it is packed with interest and thrills. The story is well illustrated with many photographs taken along the way.

**WESTWARD HOBOES,** by Winifred Hawkrige Dixon (Scribner's) New York, \$4.00.

Well characterized as the "ups and downs of frontier motoring" this is the story of two American girls who decided to rough it and see the country in a purposeful way. They shipped their car to Galveston and motored from there up through the Rio Grande country, north through the Rockies and then home by way of the northern States, following roads where road were offered but where they were not, blazing the trail to their objective. They had a wonderful trip and tell of it delightfully. One acted as official photographer and is responsible also for the unique map of the journey shown on the lining paper.

**THE EDGE OF THE JUNGLE,** by William Beebe, N. Y., (Holt) .\$.250.

With the great interest which now dominates the world in books of travel to distant lands and seas, this delightful story by Mr. Beebe, following his "Jungle Peace", will be received with welcome and accorded a place of distinction by all book lovers.

**Forest Mensuration,** by Herman Haupt Chapman—(Wiley—New York). \$5.00.

This book contains a thorough discussion of the measurement of the volume of felled timber, in the form of logs or other products; the measurement of the volume of standing timber; and the growth of trees, stands of timber and forests. It is designed for the information of students of forestry, owners or purchasers of timberlands, and timber operators. The subject matter so treated is fundamental to the purchase or exchange of forest property or of timber stumpage, the valuation of damages, the planning of logging operations, and the management of forest lands for the production of timber by growth.

It is intended as the successor of Graves' *Forest Mensuration*, and was undertaken at the request of the author, H. S. Graves, whose original text, *Forest Mensuration*,

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appearing in 1906, set a standard for textbooks in forestry and has been of inestimable value to foresters and timberland owners in America. The present text is not a revision of the former publication, but an entirely new presentation, both as to arrangement, methods of treatment and much of the same subject matter.

**A Text Book of Wood,** by Herbert Stone—(Rider—London).—\$5.00.

This book was written to provide a textbook for advanced students and to gather in a condensed form under one title all the many scattered morsels of information

about wood which are to be found in works which treat of it as a secondary matter, as in botanical works. It is highly useful for its special purpose and a valuable compilation of necessary facts and information.

The American Geographical Society has issued a booklet of exceptional merit entitled "Palisades Interstate Park." The charming style of the author, Dr. R. L. Dickinson, is one that must appeal to every lover of nature and the beautiful pen sketches and panoramas represent a very high standard of illustration.

## STOPPING FOREST FIRES

Gifford Pinchot, Chief Forester, of Pennsylvania, has made the following comment on the forest fire season in Pennsylvania during the fall of 1921:

"The people of Pennsylvania are getting their money's worth from the million dollars appropriated last spring by the Legislature to put down forest fires. Half of the million is being spent during the present fiscal year. This is what is being done with it, and here are some of the results:

"Fifty new steel towers, most of them sixty feet high, have been erected at the best observation points throughout the State. Every tower was completed and connected by telephone with men organized into effective fire fighting crews before the fire season began. An entirely new system of fighting forest fires, pronounced by the U. S. Forest Service to be the best in existence, was devised and installed. Fire wardens and other fire fighters were equipped with fire tools, among them a new combination rake and bush-hook superior to anything yet invented.

"Before the fall forest fire season opened, the Department was ready to meet it. The best way to get an idea of the results accomplished is to compare them with the average fall fire season during the previous five years.

"The average number of fall forest fires that started during the last five years was 254. In 1921 there were 197. The average area burned over in the five years was 21,564.73 acres a year. In 1921 it was 4,085.68, or less than one-fifth.

"You cannot keep all fires from starting, but you can handle them promptly and effectively after the start. The best test of a forest fire organization is the average size of the fires. The smaller the size the better the work. From this point of view it is worth noting that the average size of fires in the fall for the previous five years was 84.9 acres, while the average acreage per fire in 1921 was 20.73, or less than a quarter.

"If we compare the results in 1921 with the best fall in the previous history of the Department, a fall of such exceptional weather conditions that only 81 fires were reported as against 197 last fall, we find that less than two-thirds of the area was burned over, while the average per fire was only one-fourth.

"I am very proud of the men who have brought these results about. They have proved themselves worthy of the confidence the people of the State, through the Legislature, have reposed in them. It is no more than fair to say that they are giving the State a dollar's worth of work for every dollar the Department of Forestry is spending.

"The job of stopping forest fires is well begun. We have proved that it can be carried through if the next Legislature will give us the money to do it. In the meantime, it is some satisfaction to know that the State is not only getting what it paid for, but that increased forest growth will pay it all back."

## FORESTS AND STREAM FLOW

Investigation of the effect of forests upon stream flow is being made jointly by the Forest Service and Weather Bureau of the United States Department of Agriculture, at a station in the comparatively light forests of the Colorado Rockies. "When completed," says the department, "this investigation will furnish information of great value and significance for this and similar sections of the United States where agricultural development is dependent upon stream flow for irrigation."

Somewhat similar work has been done in Europe, notably at Zurich, Switzerland. Observations, extending over 18 years, were made upon two small watersheds, one wholly, and the other one-third, forested.

"On a proportional basis," the Forest Service says, "the total annual stream discharge was approximately equal on the two Zurich watersheds. In short, heavy rain-falls the maximum run-off per second in the forested watershed was only one-third to one-half that on the lightly forested watersheds, and the total flood stage discharge usually one-half. Although, as a result of very long, heavy rains, the run-off was the same after the forest soil had become saturated, the forest cover appreciably stabilized the stream flow and reduced the extremes of both high and low water. The forest cover was also beneficial in preventing landslides, which were common on steep, unforested slopes during heavy rains, and in preventing erosion, which greatly increases flood damage throughout the entire course of streams."



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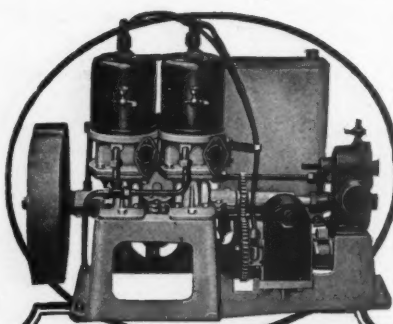
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## NATIONAL FOREST FOR PENNSYLVANIA

A new National Forest, to be created on the headwaters of the Allegheny River in Pennsylvania, according to an announcement of the Forest Service, United States Department of Agriculture, will minimize the danger of destructive floods in the river which have caused losses amounting to millions of dollars in the past. This river is one of the most important navigable streams in the State, and is subject to sudden floods. By perpetuating the forest areas and restocking the cut-over lands of this watershed the danger of erosion and of destructive floods will be lessened. Tracts of land comprising 412,000 acres in Warren, McKean, Forest and Elk Counties, have been approved for purchase by Federal officials, and will be known as the Allegheny National Forest. This purchase marks the first application in Pennsylvania of the "Weeks Law" under which lands on 17 purchase areas, totalling 2,000,000 acres, have already been acquired in the White Mountains, Southern Appalachians and Ozarks. The National Forest Reservation Commission, formed under this law, approved the location for purchase of 1,080,000 acres in Pennsylvania and 62,000 acres in New York. This latter area was subsequently excluded from the program upon New York's adopting the plan of turning the land into a State park.

## ALASKAN PULP WOOD FOR SALE

Two billion feet of Alaskan pulp wood, the largest amount of National Forest timber ever offered for sale, is described in a prospectus recently issued by the Forest Service, United States Department of Agriculture. The timber is within the Tongass National Forest, on the west side of Admiralty Island, and covers about 90,000 acres with a frontage of 48 miles of navigable water, and 24 miles by boat from Juneau and 900 miles from Seattle. Four-fifths of the timber is western hemlock and one-fifth Sitka spruce, both of which make excellent grades of paper, as has been demonstrated by the mills of Oregon and British Columbia.

The sale period will be 30 years, and a large plant will be required to utilize all the timber within that time. The sales contract requires that a pulp manufacturing plant of not less than 100 tons daily capacity shall be established in Alaska by the purchaser within 3 years. This section of Alaska has many unappropriated power sites of suitable capacity for large pulp and paper plants.

The need of developing our pulp industry is emphasized by forestry experts who point out that although prior to 1909 all the paper consumed in this country was manufactured here, in 1920 two-thirds of the news print used in the United States was made from timber grown on foreign soil. Reduced to dollars and cents this represents an annual payment of \$191,000,000 for pulp wood, wood pulp and paper which this country has been obliged to import due to lack of raw material available to existing pulp mills. A partial solution of this problem, foresters say, lies in establishing pulp mills in Alaska, where there is now a large supply of spruce and hemlock, and where wood can be grown at a rate sufficient to furnish indefinitely one-third of the present American news print requirements.

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## 1922 IDAHO FORESTER STAFF

The staff for the publication of the 1922 IDAHO FORESTER was elected at a recent meeting of the Associated Foresters of the School of Forestry at the University of Idaho. W. Byron Miller, of Stevenson, Washington was elected Editor-in-Chief and Leslie E. Eddy of Dietrich, Idaho, Business Manager. George J. Madlinger of Poughkeepsie, New York and Jack W. Rodner of Moscow, Idaho were subsequently appointed as Associate Editors and Russell Parsons of Moscow, Idaho, as Assistant Business Manager.

The newly chosen staff has actively begun to push the work on the annual publication of the Idaho School of Forestry and the book promises to be of more interest to lumbermen and foresters throughout the northwest as well as to those associated with the university than ever before.

### SMOKERS AND FOREST FIRES

From reports received at the District Forester's office, a total of 100 forest fires in Oregon and Washington during 1921 were due to smokers. These reports are from only thirteen of the twenty-two National Forests but indicate, forest officers say, that a far greater percentage of forest fires the caused each year by cigarette and cigar stubs and matches than is generally supposed.

The Okanogan Forest reports that 39 per cent of their fires were due to smokers, while 16 fires on the Crater Forest which cost \$225 to put out started from smokers' cigarette stubs or unextinguished matches. The Whitman Forest states that 21 fires on that forest were due to smokers. The Colville Forest reports that it cost \$874 to put out 10 fires starting from smokers, while the Olympic Forest had only one smoker's fire but that cost \$68 to extinguish.

A tobacco firm in Canada recently adopted the novel plan of making each package of its cigarettes preach a sermon against forest fires. Neatly tucked away amid its aromatic contents is a small red slip on which these words are printed:

"Please don't throw away a lighted cigarette. See that it is dead out.

"Lighted tobacco and matches are especially destructive in the forests.

"Living forests mean liberal employment; dead forests employ nobody.

"Don't be responsible for a dead forest.

"This caution is printed as a contribution to the forest conservation movement."

Americans, seeing these little red slips have been heard to wonder why similar action has not been taken by the United States tobacco manufacturers, especially in view of the large number of fires caused yearly by careless smokers.

Cigars and cigarettes consumed every single day in the year, if placed end to end, would reach from the Atlantic to the Pacific and back again; 80,777 cigarettes and 13,835 cigars are burned to ashes for every minute of the 24 hours. The combined total lengths of cigars and cigarettes smoked annually in the United States aggregate almost 2,275,000 miles—over six times the total mileage of the nation's railroads.

### KILLING FLIES OF WALNUT HUSK-MAGGOT

Experiments in the control of the walnut husk-maggot, a serious enemy of the black walnut, have been conducted with success by the Bureau of Entomology, United States Department of Agriculture. The results of the work accomplished as far as it has gone are now published by the department in Department Bulletin 992, entitled the Walnut Husk-maggot, by Fred

E. Brooks. The habits and life history of the insect have been determined sufficiently to allow the study of control measures, which have been conducted successfully in two important black-walnut groves.

A lead-arsenate spray was used in both instances, with the result that in one grove a count of the nuts showed that 4 per cent had been attacked by the maggots, compared with 60 per cent destruction the year before. In the other the condition was estimated as 75 per cent better than during the previous season. Flies confined in roomy wire-screen cages were observed to feed freely on sweetened water, to which sufficient lead arsenate had been added to give the liquid a milky color. They, however, succumbed slowly to the poison, and further tests are thought advisable before this treatment can be fully recommended.

### LUMBERMEN ENDORSE FOREST POLICY

The Concatenated Order of Hoo-Hoo composed of lumbermen representing all sections of the United States has vigorously endorsed the national forest policy movement in the following set of resolutions:

WHEREAS: The perpetuation of the timber supply of the United States is of vital importance to the country, and

WHEREAS: The timber is being denuded much more rapidly than it is being grown, it is imperatively demanded that a National Forest Policy be at once inaugurated which will provide for a survey of the present timber area of the various states, and also of the denuded and idle lands, with the view of their re-forestation either by private individuals, state or national governments.

THEREFORE, BE IT RESOLVED: That the Concatenated Order of Hoo-Hoo pledges its best efforts toward enlisting the cooperation of each state and the national government in securing the adoption of such policies as will ensure an adequate supply of timber for the nation's needs, and

BE IT FURTHER RESOLVED: That one of the most essential steps in forest conservation is protecting the young and mature timber from fires, and therefore the members of Congress should be impressed with the necessity of providing adequate funds for the Forest Service in order to reduce to the minimum the fire hazard, insect and other destructive causes. Hoo-Hoo believes that a tree saved from fire equals a tree produced.

The work of the Forest Service Laboratory at Madison, Wisconsin, is entitled to the support of the entire industry, as its research work is of great value to the lumber users of the country, and Hoo-Hoo unqualifiedly commends its work.

## ATTENTION, FORESTERS

AMERICAN FORESTRY will print, free of charge in this column, advertisements of foresters wanting positions, or of persons having employment to offer foresters. This privilege is also extended to foresters, lumbermen and woodsmen, discharged or about to be discharged from military service, who want positions, or of persons having employment to offer such foresters, lumbermen or woodsmen.

### POSITIONS WANTED

POSITION wanted as Forester or Superintendent on a private estate or otherwise, by a thoroughly practical, experienced, married man. English. Competent to take charge of any foresters' post in every detail. Can undertake the control of a saw mill; building roads, nursery work, landscape planting, tree work, and handling help. Good references. Address Box 3040, care AMERICAN FORESTRY MAGAZINE, Washington, D. C. (1-3-22)

FORESTER—Experienced in cruising and general woods work, also Aerial Photograph Interpretation, would like position with Pulp or Lumber Company. Address Box 3045, in care AMERICAN FORESTRY MAGAZINE, Washington, D. C. (1-3-22)

MARRIED MAN would like position as CITY FORESTER or in charge of large private estate. Any forestry position will be considered as a change in locality is desired. Have had technical training and recently graduated from one of the foremost forestry schools of the country. Ex-service man, having spent three years in the service. Address Box 3020, care AMERICAN FORESTRY Magazine, Washington, D. C. (9-11-21)

CITY LANDSCAPE ARCHITECT AND FORESTER, thoroughly conversant with Southern conditions, desires to change. Correspondence invited. Address D, care AMERICAN FORESTRY Magazine, Washington, D. C. (9-11-21)

EX-SERVICE MAN; age 30; married; two and one-half years in forestry college; experienced in city forestry, nursery work, tree surgery, dynamiting and in handling men; wishes position in city forestry or park department any where in northeastern United States. Now unemployed. Address Box 3025, care AMERICAN FORESTRY MAGAZINE, Washington, D. C. (10-12-21)

WINTER POSITION wanted with lumber company as time keeper or similar work. Graduate of high school and ranger course, 25 years old, good references from previous employers. Address Box 3030, care AMERICAN FORESTRY MAGAZINE, Washington, D. C. (10-12-21)

FORESTER—Graduate of Penn State, 28 years of age, desires work in Forestry or allied lines. Varied experience in Forestry and lumbering. Served with 10th Engineers and with Wood Supply Branch in France. Will consider any outdoor work with a future. Address Box 3035, care AMERICAN FORESTRY MAGAZINE, Washington, D. C. (10-12-21)

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FORESTERS, UNEMPLOYED OR EMPLOYED, having executive ability and possessing the gift to lead others, to write us. Great opportunity for those that qualify. State age, —reference—(3) if employed. School graduated from (years). Confidential. Rangers also answer this. Address Box 66-66, AMERICAN FORESTRY MAGAZINE, Washington, D. C.

CITY FORESTERS—The Oklahoma Forestry Association, in order to assist cities and towns in Oklahoma to procure men with technical training and practical experience in city forestry work desires names of qualified men. Please send name and address, giving age, training and experience to the Secretary, THE OKLAHOMA FORESTRY ASSOCIATION, Stillwater, Oklahoma.

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## NATIONAL PARK SERVICE FOR 1921

In his annual report to the Secretary of the Interior, Albert B. Fall, covering the 1921 travel season to the national parks, Stephen T. Mather, Director of the National Park Service, places the national parks at the head of those worth-while things in our national life that make for better citizens, since they provide healthful diversion, recreation and enjoyment and offer unequaled advantages in educational fields. Travel to the national parks and monuments under the jurisdiction of the National Park Service has exceeded all preceding records, amounting to the tremendous total of 1,171,797 persons or 113,342 persons more than visited these areas last year. Travel has increased to this total in 6 years from the 356,097 visitors recorded in 1916.

Strange as it may seem it took the World War to impress this country with the realization of its great scenic treasures. European ports were closed to pleasure travel not only during the war days but for a period after its cessation and when our active share in the conflict was successfully ended and the time had come for relaxation, tired minds and bodies turned to the national parks for recreation and pleasure. At once park travel leaped to unprecedented figures. The park tourist facilities were overwhelmed, but still the crowds came. Returning to their homes visitors spread the glories of the parks far and wide, inspiring others with the desire to also see these wonder places which they had seen.

The total area of the 9 parks is 10,859 square miles or 6,949,760 acres and the area of the 24 national monuments is 1,815 square miles, or 1,161,600 acres, a property valued at many tens of millions of dollars. There is one national park in the Hawaiian Islands and one in Alaska. Only one national park, the Lafayette, lies east of the Mississippi. Two of the monuments are located in Alaska while the others are located in the United States proper west of the Mississippi.

The annual cost to the Nation for the upkeep of these areas has been extremely small; this last year the total Congressional appropriations amounted to \$1,402,200. Of this amount, however, \$315,000 was for new road projects. Revenues derived from the operation of the parks amounted to \$396,928.27.

## FOREST RECREATION

Forcibly presenting the fact that forest recreation is a genuine, universal forest utility, and that as such its recognition is becoming general, strong resolutions were recently adopted by the American Association of Park Superintendents in annual convention at Detroit.

## MONEY FOR NATIONAL FOREST ROADS

"The signing by the President of the Federal Highway Act, appropriating \$15,000,000 for forest roads and trails, makes available at once \$758,913 for national forest roads in Oregon, Washington and Alaska and marks an important step toward the development of the great resources of our national forests", states Geo. H. Cecil, district forester of the North Pacific District.

The act appropriates \$9,500,000 for forest roads of primary importance to the States, counties, or communities within, adjoining, or adjacent to the National Forests. Of this amount \$2,500,000 is made immediately available for apportionment based on the area and value of the land owned by the Government within the National Forests. As heretofore the construction work will be done by the U. S. Bureau of Public Roads, in cooperation with the Forest Service. This distribution by States has been made by the Secretary of Agriculture.

The appropriation for the construction of maintenance of roads and trails of primary importance for the development and protection of the National Forests is \$5,500,000, of which \$2,500,000 is immediately available. The act prescribes no mathematical apportionment of this amount, but states that it shall be according to the relative needs of the various National Forests.

One new feature of the bill is that the cooperation of Territories, States, and civil subdivisions thereof is liberalized far more than in previous acts, in the expenditure of appropriations for National Forest roads. The law, as heretofore permits the Secretary of Agriculture to receive cooperation, and Forest Service officials believe that undoubtedly considerable amounts will be offered, thereby augmenting forest road construction.

## HEADING BEECH TREES LOW

IF beech trees are headed low there will be less opportunity for lovers and jack-knife vandals to mutilate the bark with crude art, the United States Department of Agriculture suggests. Beeches and birches suffer most by the aimless jack-knife. If landowners realized that this objection could be overcome easily by training the limbs low, the trees would be greater favorites.

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